

# Railway Age

Vol. 87, No. 18

November 2, 1929

Table of Contents Appears on  
Page 5 of Advertising Section

## President Hoover on Waterways

THE address delivered by President Hoover at Louisville, Ky., on October 23, makes him more emphatically than ever the leader of the movement for extensive development of inland waterways, and places the full influence of his administration behind this movement. Mr. Hoover's great ability and sincerity, and his patriotic desire to increase the prosperity and wealth of the American people, are beyond all serious question. But no man, however great, is omniscient or infallible. Mr. Hoover is not an expert on transportation economics. A large majority of those who have thoroughly studied transportation economics believe that, in the main, the waterway policy to which he has committed himself is economically unsound. It is the duty of those who disagree with him to say so and to present their reasons for doing so. The transportation problem is one of the most important problems of this country. It should be frankly and thoroughly discussed in order that it may be solved in the soundest way practicable.

Mr. Hoover said, "As a general and broad policy I favor modernizing of every part of our waterways which will show economic justification in aid of our farmers and industries." From this policy there can be no dissent. The president's statement raises a question of the greatest importance, however. What is "economic justification in aid of our farmers and industries?" Is the improvement of a waterway economically justifiable merely because it will reduce freight charges, or is it economically justifiable only if it will reduce the total cost of transportation, which on improved waterways, includes not only the freight charges, but also the taxes paid by the public for interest upon the investment in the waterway and for its maintenance? Unfortunately, neither the President, Secretary of War Good nor any other important officer of the government has yet answered this question. In consequence, nobody knows what they regard as "economic justification" for the development of any waterway.

### *Are Waterways and Railways Competitors?*

"We must continue government barge lines through the pioneering stages," Mr. Hoover said, "but we must look forward to private initiative not only as the cheapest method of operation but as the only way to insure

adequate public service." Under the Denison bill passed by the last Congress the government's barge line on the Mississippi river system is being extended, although it has been engaged in "pioneering" for about a decade. What is "pioneering," and how long should it continue? The longer the government stays in the barge line business and the more it extends its service the harder it will be to get it to retire from the field.

"And the new waterways are not competitive," Mr. Hoover added, "but complementary to our great and efficient railways. It is the history of transportation that an increase of facilities and the cheapening of transportation increases the volume of traffic." The view that waterways are not competitive with railways is frequently expressed, but no recognized authority on the history and economics of transportation does or can accept it. Throughout the history of the country waterways and railways have been competitors. When a shipper has a choice between the two means of transportation, and they both seek his business and each of them so adjusts its rates and renders its service as to try to get his business, they are competitors for it, and if one of them gets part or all of his traffic the other cannot get that traffic. Often it is said the waterways will "relieve" the railways of cheap, bulky commodities and leave them to carry the more valuable and profitable traffic. But this is economic nonsense, because, owing to its heavier loading per car, the handling of cheap and bulky traffic usually is more profitable to the railways than the handling of more valuable and less bulky commodities. There will not be a ton of freight handled by water because of the improvement of any inland waterway that could not have been handled at some profit by rail, and an increase in traffic by water will involve diversion of traffic from railways, and interference with the increase of railway traffic and earnings, and also with the reduction of the unit cost of handling by rail, which, other things being equal, always results from an increase in the density of railway traffic.

### *Waterways as Developers of Traffic*

In answer to the foregoing, it may be said that the President believes that the cheapening of transportation by development of waterways will stimulate industry

and make the total volume of freight larger than it otherwise would be, and that this increase in total volume will result in the railways actually getting more freight to carry than they otherwise would. But upon what basis of facts is predicated the assumption that the improvement of rivers will "cheaper" transportation? Where is there any improved river in this or any other country on which freight has been or is now carried more cheaply than by American railroads, if the taxes paid by the public to provide water transportation be included in its cost? Where are any estimates, based upon reliable and convincing engineering and economic data, that there ever can be made any improvements in rivers that will enable them to carry freight cheaper than our railways, if taxes as well as freight rates are included in the estimated costs of river transportation? The argument that improvement of rivers will cheapen transportation must be based entirely upon assumption, since those who make it never advance any evidence in support of it, no matter how often their assumption is attacked with evidence tending to show that it is unfounded. Of course, if, as most economists believe, the improvement of rivers will not reduce, but will actually increase, the cost of transportation, then it will not stimulate the development of traffic and thus increase the total amount of traffic in which the railways may share.

There are two important questions involved. One is the effect that the development of waterways will have upon the railways. Would it be desirable, regarding the matter entirely from the standpoint of the public welfare, to develop waterways, and thereby divert traffic from the railways, and injure them, if the result would be that the total cost of carrying the traffic by water would be greater than the freight rates that would have to be paid for carrying it by rail? The second important question involved is one of taxation. Taxes already are high. They will be increased by large expenditures upon waterways. Would it be economically justifiable to increase taxes for the purpose of reducing freight charges if the increase in taxes would exceed the savings in freight charges? These two important questions regarding the development of waterways have never been squarely answered by the advocates of that policy. They always have been evaded. They ought to be met by public men who advocate waterway development, in order that the public may know upon what principles waterway development is being advocated.

#### *Theodore Roosevelt and the Erie Canal*

What is occurring now recalls something that was occurring almost 30 years ago. President Hoover's prestige is so great that his advocacy of development of waterways has become the principal argument used in favor of it. His advocacy of any policy is accepted by many persons as almost complete proof of its soundness. The late Theodore Roosevelt was formerly regarded in the same way by many millions of persons. In 1900 Mr. Roosevelt was governor of New York

state. In that year he advocated an appropriation of \$62,000,000 for the improvement of the Erie canal, saying, in a message to the legislature, "If the canals are made large enough they can successfully compete in the transportation of high class freight which is now carried by the railroads at high prices." It will be observed that Mr. Roosevelt considered waterways as competitors with railways. Was he right, or is Mr. Hoover right in taking the opposite view? Under Mr. Roosevelt's compelling leadership the movement for the improvement of the Erie canal got well under way. It was predicted at that time that the freight carried on it after it was improved would soon be 20 to 30 million tons annually.

In a message to the New York legislature in 1925 Governor Smith estimated that up to that time the Erie barge canal had cost \$230,000,000, and in that year the tonnage carried was only 3 million tons. Another Roosevelt is now governor of New York—this time, Franklin D. Roosevelt. The present Governor Roosevelt, speaking at Albany on October 18, at the annual convention of the State Waterways Association, said that unless better use was made of the canal it might as well be scrapped. But he is not in favor of scrapping it. It having been deepened to nine feet at large expense, and having thus far carried only about one-seventh of the traffic predicted by the former Governor Roosevelt, the present Governor Roosevelt is in favor of deepening it to a ship canal! Is there no experience or evidence that will convince a real waterway advocate of anything excepting that waterways should be made wider and deeper?

The record conclusively demonstrates that Theodore Roosevelt made a colossal blunder in his advocacy of the improvement of the Erie barge canal. It has cost about four times as much as he estimated; has handled less than one-seventh as much traffic as he estimated; and four times as much of the cost of transporting every ton of freight carried one mile on the Erie canal is paid by the taxpayers of New York state as is paid in freight charges. Is Herbert Hoover's waterway policy as much of a mistake as was that of Theodore Roosevelt?

## Stock Market and Railways

THERE is naturally widespread concern regarding the effect upon business that will be produced by the recent great decline in the market prices of stocks. The prices of industrial stocks had risen much more than those of railway stocks, and they have declined much more; but prices of railway stocks are much lower now than when they reached their peak early in September.

No such violent decline in the market prices of stocks can occur without temporarily having some adverse effects upon business. There never were so many persons "playing" the market as recently. Many of these,



ranging all the way from millionaires down to janitors, have suffered relatively heavy losses and their purchasing power has been impaired. But before reaching a conclusion as to the effects that will be produced on business it is well to consider what were the causes of the violent break in stock prices.

For some years general business has been unprecedentedly good, and the profits of industry and commerce as a whole have been unprecedentedly large. Recently there have been indications of a moderate recession in business. In some lines the decline has been considerable. Throughout this year activity in building construction has been less than last year, and recently there has been a substantial decline in the sales of automobiles. Did this tendency toward a moderate recession in business contribute toward causing the break in the stock market? No doubt it did, but only in small measure.

The rise in stock market prices began in the latter part of 1923, and continued for about six years. In its early stages it was justified by credit conditions, the increasing volume of business being done, and actual and prospective profits. During the last two or three years, however, prices of many stocks advanced to levels for which there was no warrant. They advanced until the earnings and dividend yields upon many securities became so small that the prices being paid for them could not be justified upon any economic theory excepting that there were going to be in the near future increases in corporation profits and dividends exceeding the wildest past dreams of avarice. Their advance continued in disregard and defiance of the fact that credit conditions had become such that not only the rate of interest that had to be paid on money used in carrying stocks, but also the rates that had to be paid in all kinds of business, had risen to heights not reached before in years.

What all this seemed to mean was that there was occurring an orgy of speculation due mainly to sheer gambling by many thousands of persons who knew and cared nothing about the actual value of the securities they were buying and selling. At the height of this orgy there began the moderate recession in general business already mentioned. Many thousands of those who had large "paper" profits decided it was time to take their profits. When they tried to sell their stocks they could not find enough persons who were more foolish than they were to buy them; and as a result the market collapsed.

The history of all previous great speculative movements indicated that this outcome was inevitable. For a long time the public has been deluged with theories and alleged facts purporting to show that, in this instance, history could not repeat itself. But history has repeated itself. All the arguments used to show that it could not and would not have now been proven to have been so much rubbish. The laws of economics have not been repealed. It is unfortunate that the break

did not come a long time ago, because it would then have been less violent. It is fortunate it came as soon as it did, because if longer postponed it would have been more violent. Stocks are worth in proportion to what can be earned upon them and paid out in dividends. Prices that disregard earnings and dividends are the result of mob psychology. In the long run, the prices of the stocks of railroads and all other corporations will be determined by earnings, dividends and other economic factors.

The stock market collapse will be temporarily harmful, but later beneficial to general business. The huge speculation that has been going on is one of the principal causes of the tendency toward a recession in business which recently has been manifested. The construction industry is one of the largest in the country. The increase in the cost of capital caused by stock market speculation probably has been the main cause of the decline in construction which has occurred this year. The increase in interest rates has been a brake upon progress in many other lines of production and commerce.

High prices of their stocks are of little value to the railroads when due to speculation. Excepting temporarily, the market value of railroad securities is determined by the net operating income of the railways—that is, by the difference between their earnings and their operating expenses and taxes. Their total earnings are determined principally by the volume of their traffic, and this, in turn, by the volume of production and commerce. Excessive speculation and abnormally high interest rates interfere with the growth of production and commerce, and, therefore, with the growth of railway traffic and earnings. The reduction of wild speculation will, therefore, in time tend to help, not hurt, the railroad industry.

Fundamentally, general business conditions are sound. The orgy of speculation in stocks has not been accompanied by speculation in commodities, resulting in inflation of commodity prices, as was the case in 1919 and 1920. The recent trend of commodity prices has been moderately downward, but it is believed that the inventories being carried by most classes of business concerns are comparatively small—in other words, that production has not much outrun consumption, and that the continuance of a normal demand of consumers for goods will cause a continuance of normal production and shipment of goods. The strain upon the credit resources of the country has been reduced by the decline of stock prices. Generally speaking, the agricultural situation is favorable.

It would seem, therefore, that any recession in business that will occur will be comparatively small and brief, and that the railways can reasonably prepare for handling a normal volume of traffic, and anticipate that, by continuing to effect economies in operation, they will be able to gain financial results satisfactorily comparable to those recently secured.

## The Pennsylvania's New Stockholders

**E**MPLOYEES of the Pennsylvania Railroad to the number of 34,863 have recently completed payments on stock which they contracted to purchase last July. These employees purchased the stock on a basis of \$5 per month per share. An additional 57,000 elected the alternative of paying \$2 per month per share and thus have not as yet received their certificates of ownership. A grand total of 94,863 employee stockholders, however, should be the result of this really magnanimous offering by the railroad company—magnanimous because the stock was offered at par—\$50, at which price it pays eight per cent on the investment—and has been quoted on the New York Stock Exchange as high as 110. On October 11, stockholders of the Pennsylvania Railroad reached the record total of 184,997, of which 30,582, or 16.5 per cent, were employees. Next year, when the 57,000 now paying for stock are formally registered as holders, the proportion of employee-stockholders to total owners of the property ought to exceed 35 per cent.

There were, until the last week or so, great gains in the market value of most stocks. Since that time there have been heavy losses. Such fluctuations, however, need not concern the employee-stockholder, particularly provided he has been able to purchase his stock on the same basis as it is usually offered to other stockholders, i.e., at a price sufficiently below the market price to yield him a satisfactory dividend return upon his investment.

The goal of any plan of providing for employee ownership is to encourage thrift, to promote a greater interest in the prosperity of the property and to afford to employees a share of the proceeds of increased efficiency. The offering of stock to employees at a price considerably below the market, is in a measure, a form of profit-sharing for those who wish to avail themselves of it. It has, as a rule, the further advantage of making the interest return sufficiently attractive so that the employee-investor is largely freed from the temptation to resort to trading in the stock as a means of earning an adequate return on his investment (which latter process is fraught with danger for the amateur). Equities and earnings, also, are, under such a plan, usually sufficient to make the employee's investment in the stock remarkably safe, entitling him at the same time to a share in the proceeds of increased efficiency which he can, if he wishes, so largely foster.

The sale to railway employees of stock in the companies by which they are employed has gained considerable headway in the past few years. It is a movement which may well be fostered and, properly planned, it need not be disturbed by market fluctuations, whether up or down. The first considerations of course should be that of the safety of the investment. If that is rea-

sonably provided for, an effort may well be made to set a price which will assure an attractive interest return on the investment to avoid any temptation to sell. If these considerations receive proper attention, then success of employee ownership need not depend at all upon market fluctuations—or any conditions at all other than the business the railroad is able to secure and handle efficiently. And a sound policy regarding employee ownership ought to provide one of the best assurances that these two latter conditions would be favorable.

## Active Equipment Markets

**W**HILE October witnessed but little activity in the passenger car market and was by no means a record period from the viewpoint of recorded locomotive orders it must, nevertheless, be set down as one of the best months of recent years for the railway supply trade. Not for five years, at least, has the tonnage of rail purchased in a single month equaled the amount ordered during the one just past; and not since January, 1927, has the number of freight cars bought in any similar period even approached the number ordered during October.

Rail orders placed during the past month totalled 794,046 tons, exceeding the totals of previous record months, October, 1926 and October, 1925, by several thousand tons and every other month since the beginning of 1925 by more than 300,000 tons. It is true that orders from the New York Central and the Pennsylvania, placed, as it happened, within a single week, accounted for almost two-thirds of this enormous total, but there were also five other orders, for 20,000 tons or more each, from five other Class I railroads representing, among them, virtually the entire country.

In the case of freight cars the story is substantially the same. The total orders for the month—17,207—exceeded by eleven cars the number ordered in January, 1927, the last previous peak, and represented an increase of nearly 3,000 cars over any intervening month. Again, nearly two-thirds of all the cars were purchased by two railroads—the Atchison, Topeka & Santa Fe and the Southern—but there were other orders of no inconsiderable size from many other Class I roads representing, as did rail orders, practically all parts of the country.

That the month has been a prosperous one for the manufacturers of rails and freight cars goes without saying. It is, however, equally obvious from the record of October equipment orders that the betterments and additions to physical equipment which have been such a marked feature of management policies during the last decade have by no means reached an end and that shippers in all sections of the country are to benefit by a continuance of such improvement programs as long as traffic offered and railroad prosperity allow.



# New Short Coal Line Provides An Interesting Study



One of the Western Seven-Yard Wagons Discharging a Load Over the End of an Embankment

Tractors and Seven-Yard Dump Wagons Were Used Effectively on a Part of the Work

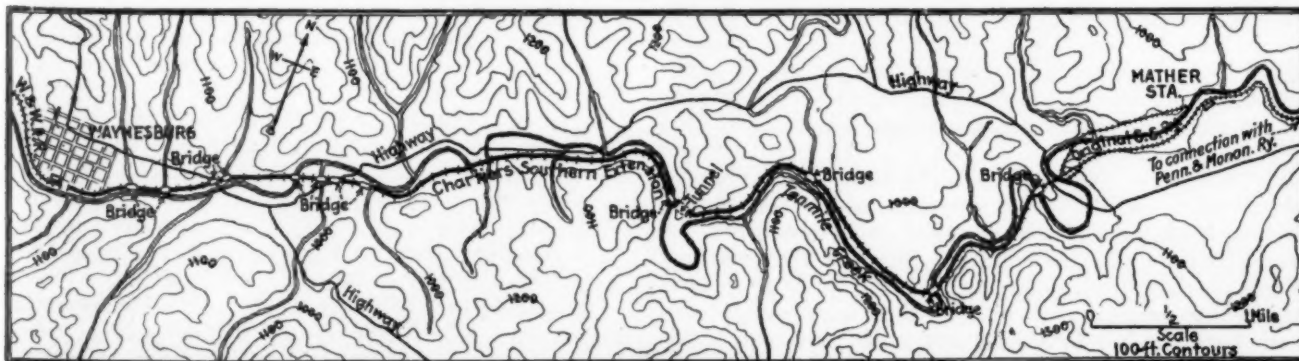
## *Seven-mile extension of Chartiers Southern presented unusual construction and operating features*

**I**N a quest for new coal tonnage and the local freight business of a practically isolated town of about 6,000 population, and possibly with the idea of becoming an important adjunct to three of the trunk line roads of the east, a seven-mile, single-track line is nearing completion in the hills of Greene County, Pa., in the southwestern part of the state, which has many features of interest from both operating and construction standpoints. This line, which is being built by the Chartiers Southern, a subsidiary of the Monongahela, is an extension of a short line started as a war measure by the director general of railroads and later completed largely at the behest of coal interests desirous of railroad service.

Although prompted by the possibility of developing a large tonnage and a profitable return, the advent of the highway bus as an established common carrier and the slump in the bituminous coal industry, particularly in the Pittsburgh district of Pennsylvania, have since taken much of the incentive out of the new project. However, in spite of this, the new line has been pushed through rugged country at a cost of about \$250,000 a mile. Furthermore, it is being built to liberal standards, with wide cuts and fills, steel and reinforced concrete bridges at river and highway crossings, and a strong track struc-

ture employing creosoted ties, tie plates and second-hand 100-lb. rail. Possibly the most significant feature of the new line is the fact that, in spite of the rugged character of the country through which it extends, it is being constructed with a ruling grade of 0.33 per cent, and, for the most part, with maximum curvature of 6 deg. In the present line there are two 8-deg. curves, but at both of these points provision was made for the reduction of the curvature at a later date. At one point, also, an 800-ft. tunnel was constructed to avoid adverse alignment and grade.

The Chartiers Southern, which has been building the new line, was organized in December, 1906, by the Panhandle unit of the Pennsylvania to construct a 25-mile line from a point near Greens, Pa., to Marianna, Pa., but shortly after, the Baltimore & Ohio and the New York Central each acquired an equal interest in the new company. When about 70 per cent completed, construc-



A Section of Greene County, Pa., Showing the Seven-Mile Extension of the Chartiers Southern and the Character of the Country Traversed

Top—Excavating in One of the Deep Cuts on the Line. Center—A Long, High Embankment Constructed in Connection with One of the Creek Changes Made. Lower—Construction Trestles and Narrow-Gage Equipment Were Used in Making Most of the Larger Fills



lieries with a combined capacity of about 50 cars a day.

Pushing of the line 7.3 miles westward to Waynesburg was undertaken primarily to open up rich undeveloped coal fields known to exist in the vicinity of the proposed line. Tests have indicated that thousands of acres in this territory are underlain

with what is known as the Pittsburgh vein of coal, which ranges from 6 to 9 ft. thick. The desire to open up this coal, all of which had been bought up in large blocks by coal operators who contemplated the extension of the line, was not with the primary purpose of competing with other mines, but rather because of the quality of the coal in this territory, which is known to be of an unusually high grade and particularly suited for by-product and metallurgical purposes.

The main drawback to the opening of these deposits, particularly under the adverse conditions in the soft coal industry, has been the magnitude of the investment necessary to reach the coal, which lies at a depth of from 300 ft. to 500 ft. In spite of the known difficulties, agitation for the extension continued by the coal interests who expected to start digging shafts simultaneously with the letting of contracts for the new line.

There was also agitation from another source—the Borough of Waynesburg, the proposed terminus of the line. This town, a thriving community with a population of about 6,000 was without rail transportation other than that afforded by the Waynesburg & Washington Railroad, a narrow gage line, 28 miles long, extending northward to Washington, Pa., and there connecting with the Pennsylvania. As a result of the combined agitation for the standard gage line, and with the prospect of considerable tonnage, work on the extension was started in June, 1928, contracts being let for the entire line.

At first the work proceeded with a large degree of optimism, but, after construction was well under way, the coal market situation in the Pittsburgh territory became such that coal operators in the western Pennsylvania fields were not justified in proceeding with large mine developments. At the same time the highway bus made large inroads in the freight and passenger business of Waynesburg. These developments, while not entirely unforeseen, were rather unexpected and left the road in an unfavorable situation. Willing, however, to carry out an agreement which it had with the Chamber of Commerce of Waynesburg, the railroad has continued construction.

tion work on the new line was indefinitely postponed, and for a number of years the Chartiers Southern was a relatively inactive organization. It retained its identity, however, under its own charter, until early this year when it was merged with the Monongahela, which is owned by the same three trunk lines.

The construction now under way, which extends from Mather, Pa., to Waynesburg, is an extension of a nine-mile line between Millsboro, Pa., on the Monongahela, and Mather. This original line started in a short spur track built by the Pennsylvania to reach a mine at Besco, Pa. In January, 1918, with the prospect of securing large quantities of high grade coal at a new mine at Mather, the director general of railroads took up and pushed the extension of the spur to that point, only to drop it in May, 1919, within sight of the operations of the Mather Collieries where approximately 70,000 tons of coal lay in ground storage ready to be moved out. A hurried conference between the officers of the Chartiers Southern, the mine interests and the director general resulted in an agreement whereby the Chartiers Southern completed the line to Mather and made extensive physical improvements in that part already hastily built by the director general. This short piece of line not only serves the Mather Collieries at Mather, which have a capacity of about 70 cars a day, but also two other smaller col-



Aside from the interesting features in the background of this short extension are the usual obstacles encountered and the construction methods employed in building the extension. Throughout its length the new line follows the winding south fork of Ten Mile Creek, for the most part in a deep rugged valley closely confined by the steep slopes of the adjacent hills. Throughout the first half of its length these hills assume the proportions of mountains, but on the end towards Waynesburg they flatten out and are conducive to a much more favorable alinement. It is expected that the average cost of the work will amount to about \$250,000 per mile, a figure held down materially on the one hand by skill in the selection of the most economical location, and increased somewhat, on the other hand, by a determination to secure low maintenance and operating costs by a favorable alinement and a ruling grade of 0.33 per cent, and by the use of steel and concrete structures.

Some of the heavier work made necessary in securing such conditions included a cut 96 ft. deep, another cut 70 ft. deep, a long fill with a maximum height of 40 ft., and the driving of an 800-ft. tunnel. Other important features of the work include eight steel deck girder bridges with reinforced concrete deck slabs, a reinforced concrete highway bridge and a large concrete box culvert. A number of additional structures were avoided by extensive grading operations at several points and in making creek and highway changes.

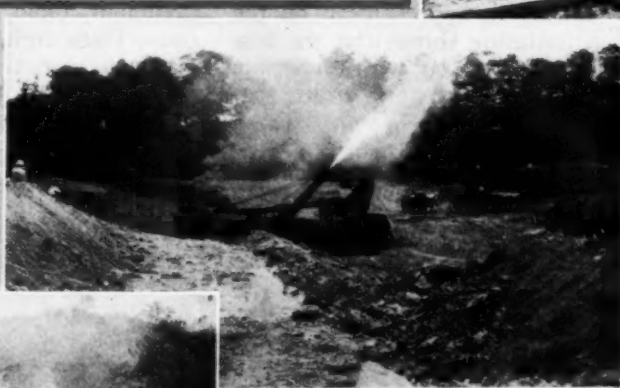
Altogether the total grading amounted to about 500,000 cu. yd., about one half of which was in rock varying from a hard sandstone to coal and a readily disintegrating slate and shale. The most difficult grading in many respects was encountered on the first two miles of line, where the country was more rugged. This section included the two deepest cuts on the line, both in rock and through such sharp ridges as to make grading operations unusually awkward. All of the rock encountered was capable of ready removal by blasting, but one quite serious problem was encountered in the fact that the harder rock strata lay high up in the cuts, supported on a much less stable rock foundation. This necessitated the making of unusually wide cuts and the removal of much larger quantities of the harder rock than would have been necessary if this latter rock had been in the base levels. From a maintenance standpoint this also promises to give difficulty, since already marked evidences of disintegration and sluffing off have been noticed in the lower layers of rock, and also in a narrow

seam of coal near the track level in the largest cut.

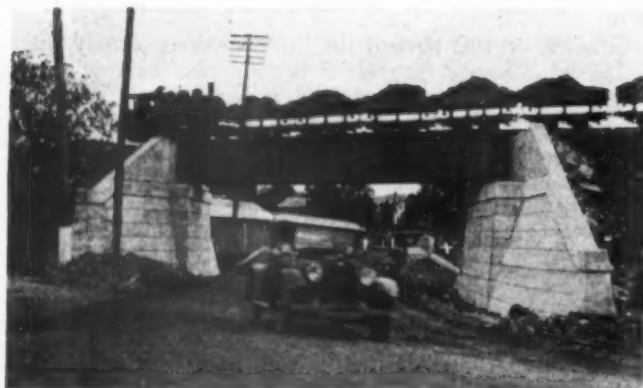
Grading on this part of the line was done largely with a 1½-yd. Osgood shovel and with two narrow gage Vulcan steam locomotives and a number of Western 5-yd. side-dump cars, operated in conjunction with temporary construction trestles for making fills. An Osgood dragline was also employed in this section, but was used primarily in making a ¼-mile change in Ten Mile creek in order to permit the building of an embankment in a part of the creek channel along the base of a steep hillside.

#### Effective Grading Equipment Was Employed

On the five miles of construction at the west end of the line the grading was considerably lighter than on the east end and, within this territory, owing to the more favorable topography, the maximum cut is only about 30 ft. deep and there are only a few fills higher than 20 ft. Here, where the work is more than two-thirds completed, practically all excavation has been handled by two Erie shovels and an elevating grader. At first about fifty 1½-yd. Western dump wagons were employed with the excavating equipment, these being hauled singly by teams, and in trains of five or six wagons by 60-hp. crawler tractors. Since August, 1928, however, two 7-yd. Western crawler dump wagons have been used,



Top—The East Portal of the 800-Ft. Tunnel on the New Line. Center—Excavating in Connection with One of the Creek Changes on the West End of the Work. Lower—Constructing the First Steel-Girder, Concrete Slab Deck Bridge on the Line Near Mather, Pa.



One of the Eight Deck Girder Bridges on the New Line

replacing the smaller capacity dump wagons, and have been found much more efficient, both in hauling through heavy muck and clay and in placing their loads in the fills. One of the most effective uses of these larger crawler-type wagons was in making one of the creek changes where considerable difficulty would have been encountered by the wheeled wagons in moving through the soft bed of the creek and up the steep slopes to the waste banks. In addition to the grading equipment used on the west end of the work, as already mentioned, a 2-yd. Marion shovel, working with 3 dinkies and 30 side dump cars has been used since last March in making some of the deeper fills.

#### 800-Ft. Tunnel Was Necessary

The tunnel on the new line, which is located about three miles from the start of the new extension and divides the grading work described, is a single-track bore, 800 ft. long, and is located on a 6-deg. curve except for 100 ft. of tangent at the west end. In the east end of the tunnel a mixture of poor quality shale and slate was encountered, resting on a 6-in. layer of coal with a foundation of fire clay, while toward the west end, the rock pierced was a fairly good quality of sandstone.

Altogether the tunnel involved about 77,000 cu. yd. of excavation, which was drilled and blasted down in the usual manner and removed by an Erie shovel loading into 5-yd. side dump cars. Owing to apprehension on the part of the contractor in tunneling through at the east end, excavation was followed up closely with timbering, consisting of 12-in. by 12-in. wall posts and crown seg-

ments spaced 4 ft. center to center. Toward the center of the tunnel wall posts gave way to arch segments of 10-in. by 10-in. timber spaced on 4 ft. centers and benched into the rock at the springing line, while 8-in. steel H-section beams were used for timbering in the west end of the tunnel. This steel timbering, which was used in the crown segments only and benched into the side walls, was placed on 5-ft. centers and proved so effective that during the lining of the tunnel all timber used in the early stages was removed and replaced with steel sections.

When holed through, the entire tunnel was then lined with concrete and provided with a concrete floor so as to preclude the necessity for deep side wall foundations and, at the same time, to prevent the possibility of bulging of the soft material in the lower exposed strata. In this work all of the concrete used, which amounted to approximately 6,000 cu. yd., was mixed in a central plant built up against the steep side slope of the valley, near the east portal. From this plant, where facilities were provided for the accurate proportioning of the concrete mix in accordance with the water-cement ratio, the concrete was conveyed to the forms in an elevated hopper mounted on a narrow-gage flat car. This rig was moved back and forth in the tunnel by a gasoline locomotive. All of the concrete in the side walls of the tunnel was chuted into place direct from the conveying hopper, while that in the arch section was placed under air pressure by a Ransome pneumatic concrete placer with a charging capacity of 7 cu. ft.

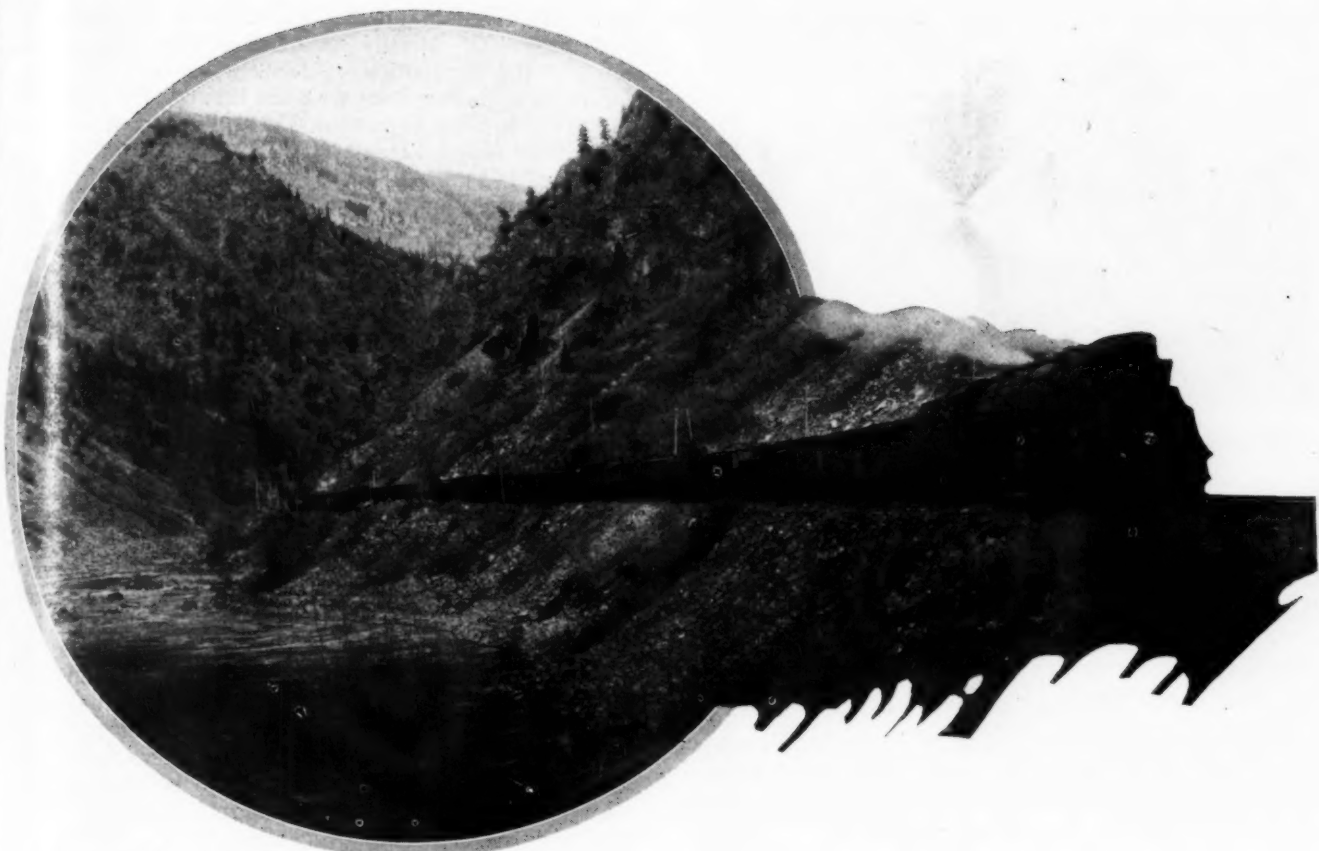
All of the survey and engineering work in connection with the new line has been handled under the direction of E. V. Braden, formerly chief engineer of the Chartiers Southern, and since the merger of this road with the Monongahela, engineer of construction on the Monongahela Railway. George F. Rittenhouse, resident engineer, is in charge of the work in the field. All of the construction has been done under a general contract with A. Guthrie & Co., Inc., St. Paul, Minn. The principal sub-contractors have been the Ferguson-Edmondson Construction Company, Pittsburgh, which did the grading on the five miles west of the tunnel; Waugh Brothers, Inc., Fayetteville, W. Va., who did the grading on that part of the line east of the tunnel; Hickey Brothers, Columbus, Ohio, and the Pittsburgh Foundation Company, Pittsburgh, which companies handled the bridge masonry work; and the Walton Construction Company, Roanoke, Va., which constructed the tunnel.

\* \* \* \*



Niagara Peninsula Vineyard Scene on the Toronto, Hamilton & Buffalo, Just East of Hamilton, Ontario





One of the D. & R. G. W. Fast Freights in the Mountains

# Cashing in on Improvements

*How the Denver & Rio Grande Western rehabilitation promotes operating efficiency*

## Part I

FOR the four years ending 1928, the average annual net revenues of the Denver & Rio Grande Western increased 68 per cent, as compared with the preceding four years. They averaged \$8,762,851 for the period ending in 1928, as contrasted with only \$5,224,512 for the period ending in 1924. This was accomplished despite the fact that the annual operating revenues remained practically the same, having averaged \$33,495,399 during the period ending with 1928, and \$33,392,767 during the previous four years.

Gross ton miles per train hour on the main line were increased 37 per cent, from 21,667 in 1924, to 29,806 in the first six months of 1929, while the system average miles per foreign car per day have been increased from 43.8 to 53.4. The average train load on the main line increased from 1,853 tons to 2,165 tons and the average freight train speed from 11.7 miles per hour to 13.8 miles per hour.

These results have been brought about by taking advantage promptly of the improved operation made possible by a betterment program that was begun in 1925, and on which \$27,869,011 had been spent up to June 1, 1929.

The D. & R. G. W. consists of 782 miles of main line and 1,816 miles of branches, the latter consisting of 997 miles of standard gage and 819 miles of narrow gage lines. The main line is divided into four divisions, the Pueblo division, from Denver to Salida, 215 miles, the Salida division, from Salida to Minturn, 86 miles, the Grand Junction division, from Minturn to Green River 253 miles, and the Salt Lake division, from Green River to Ogden, 227 miles. All of these divisions also include a considerable branch line mileage. Between Pueblo and Denver, 119 miles, a double-track operation in connection with the Santa Fe is supervised jointly. The Alamosa division is composed of the branches south and west of Pueblo, not included under the jurisdiction of the main line divisions.

When the present management took over the D. & R. G. W. in 1925, the line was faced with a desperate situation. The natural physical handicaps imposed upon the line are great. The main line between Denver, Colo., and Ogden, Utah, traverses some of the most difficult country for railroad operation in the world. In this distance, the line crosses the Continental divide at an elevation of 10,239 ft., and two other summits at



Heavier Power Was Purchased to Aid Operations

elevations of 7,237 ft. and 7,440 ft., respectively. These natural handicaps had been greatly aggravated by the financial vicissitudes which followed the rapid decline of the Colorado ore traffic, and the consequent reduction in revenues, with the result that money had not only been lacking for improvements, but even for ordinary maintenance.

#### Nature of Traffic

Helped by a much sounder financial structure, worked out following the emergence of the line from receivership, the improvement program was undertaken for the purpose of placing the line in a condition to provide safe, fast and dependable operation. This was necessary and, in fact, vital, if through business was to be obtained to make up for the loss of local traffic, since such through traffic, because of its highly competitive nature, requires a fast and reliable schedule.

This through traffic has increased rapidly, having been 1,623,683 tons in 1921, as compared with 3,549,779 tons in 1928. At the same time the improved service has stimulated local shipments, which consist principally of products of mines and of agriculture.

Despite the decrease in the Colorado ore traffic, products of mines continue to be the largest single classification of the traffic handled, representing 68.8 per cent of the total traffic. Manufactures and miscellaneous are next, with 13.1 per cent, followed by products of agriculture, 9.5 per cent, products of forests, 4.5 per cent, animals and products, 2.8 per cent.

Much of the large amount of narrow gage mileage traverses cattle country, while a portion of it serves

Table 1. Roadway Expenditures

Ballasting .....	\$1,315,500
Rails and other track material .....	4,463,481
Bridges, trestles and culverts .....	2,035,729
Changes of grade or alignment .....	3,835,323
Signals and interlocking plants .....	737,488
Additional yard tracks, sidings and industry tracks .....	2,138,193
Construction of extensions, branches and other new lines .....	714,964
Miscellaneous roadway .....	4,069,193

coal mines. Traffic originating on the main line consists largely of coal from the mines in Utah, fruit from the agricultural section of western Colorado, and live stock from the range country along the line.

The decreased local traffic made it essential that through traffic be obtained; accordingly the improvement program was begun, to insure safe and dependable operation.

Improvements in roadway account for \$19,309,871 of the total amount spent, the details of this expenditure being given in Table I. A complete description of this

work was given in the *Railway Age* of September 1, 1928, page 403. Briefly summarized, this program resulted in the elimination of 156 curves and 3,713 deg. of central angle, together with the easing of the remaining curves to a maximum of 6 deg., instead of the former maximum of 12 deg. The work involved the relocation of 143 miles of main line. The length of curved line was reduced three miles, and, to effect these changes, 3,953,000 cu. yd. of material were moved.

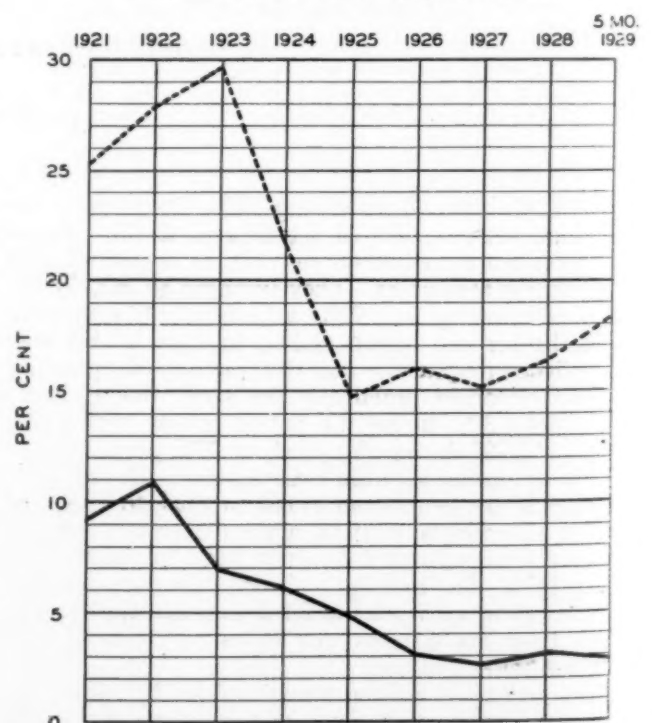
There is now no unballasted track between Denver and Ogden. Between Denver and Ruby, 472 miles, the track is ballasted with metalliferous slag, while between Ruby and Ogden, 310 miles, high grade gravel is used,

Table 2. Character of Rail

	110-lb.	100-lb.	90-lb.	85-lb.	Less than 85-lb.
1924.....	...	...	642	870	1,371
1925.....	...	...	681	866	1,344
1926.....	...	...	763	833	1,282
1927.....	...	23	892	746	1,230
1928.....	79	68	887	683	1,176
1929—6 Mos.	126	81	882	676	1,126

the ballasting program having been completed last year. All of the main line has been brought to standard widths of roadway of from 20 to 24 ft. on embankments, and 20 ft. in cuts. The standardization of bridges and culverts on the main line has resulted in the installation of 32 new steel bridges on concrete substructures, the replacing of 7 steel bridges with heavier spans, the strengthening of 4 other bridges, the building of 131 concrete ballasted-deck trestles, aggregating 5,061 lineal feet, and the replacing or elimination of 7,000 lineal feet of timber trestles. Also much heavier rail has been laid. In 1924, 642 miles of track were laid with 90-lb. rail. This has now been increased to 882 miles, and, in addition there are 81 miles of 100-lb. rail, and 126 miles of 110-lb. rail. The chronological details of the rail-laying program are given in Table 2.

----- LOCOMOTIVES UNSERVICEABLE.  
 ——— FREIGHT CARS UNSERVICEABLE.



A Steady Decrease Has Been Shown in Unserviceable Equipment



With the improvement in track well under way, a signaling program was begun. This was handled in accordance with the operating needs. The places where the line was busiest were signaled first, and the program has been continued on the basis of installing the signals where they are most needed. The installation of automatic block signals was started in 1927, when 135 miles of signals were installed. During 1928, an additional 215 miles were installed and this work will be continued until the entire main line is equipped. In 1928, remote control signals, permitting operation against the current of traffic, were installed on the double-track line on the east slope of Soldier Summit, for a distance of 25 miles.

This latter investment has enabled important improvements to be made in the operation of trains over the summit. Much coal originates in the vicinity of Helper, 25 miles east of the summit, all of which moves

total ownership was reduced from 546 locomotives in 1924, to 481 in 1929.

Also, a total of 1,682 new freight cars have been purchased, and 1,405 obsolete cars retired in the course of this program. Details as to the progress made on both locomotives and freight cars are given in Table 3.

Part II of this article, describing the operating improvements on the Denver & Rio Grande Western, will appear in an early issue.

## Freight Car Loading

WASHINGTON, D. C.

THE number of cars of revenue freight loaded in the week ended October 19 was 1,185,510, an increase of 22,375 cars as compared with the corresponding week of last year and an increase of 56,455 cars as compared with 1927. Grain and grain products and livestock were the only classifications to show a decrease as compared with the corresponding week of 1928 and the loading of coal, coke, ore, merchandise and miscellaneous freight showed increases as compared with both preceding years. All districts reported increases as compared with last year and all except the Northwestern and Central Western also showed increases as compared with 1927. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

### Revenue Freight Car Loading

Week Ended Saturday, October 19, 1929

Districts	1929	1928	1927
Eastern	261,769	260,056	242,982
Allegheny	234,690	233,660	209,436
Poconantas	66,142	62,981	57,606
Southern	163,872	160,289	163,783
Northwestern	175,607	171,470	175,938
Central Western	185,605	179,403	185,755
Southwestern	97,825	95,276	93,555
Total Western Districts	459,937	446,149	455,248
Total All Roads	1,185,510	1,163,135	1,129,055
Commodities			
Grain and Grain Products	46,354	51,838	60,514
Live Stock	38,508	39,692	40,682
Coal	204,399	203,025	192,808
Coke	12,060	10,418	9,388
Forest Products	66,404	65,092	67,873
Ore	62,612	59,504	45,285
Merchandise L.C.L.	271,902	270,308	269,411
Miscellaneous	482,265	463,258	443,094
October 19	1,185,510	1,163,135	1,129,055
October 12	1,179,008	1,190,741	1,120,007
October 5	1,179,047	1,187,032	1,102,994
September 28	1,202,111	1,196,965	1,126,903
September 21	1,166,330	1,144,131	1,126,402
Cumulative total, 42 weeks	43,423,151	41,765,670	42,524,810

The freight car surplus for the period ended October 15 averaged 107,301 cars, a decrease in a week of 4,157 cars. The total included 65,460 box cars, 11,034 coal cars, 17,794 stock cars and 5,958 refrigerator cars.

### Car Loading in Canada

Revenue car loading at stations in Canada for the week ended October 19 totaled 82,627 cars, an increase over the previous week of 4,558 cars, but a decrease of 10,395 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
October 19, 1929	82,627	41,337
October 12, 1929	78,069	42,147
October 5, 1929	79,432	43,300
October 20, 1928	93,022	41,952
Cumulative Totals for Canada		
October 19, 1929	2,900,069	1,728,742
October 20, 1928	2,903,358	1,652,764
October 22, 1927	2,660,793	1,580,474

Table 3. Equipment Status

	Locomotives				Total tractive effort in 1,000 lb.
	No. owned Dec. 31	Added during year	Retired during year	Average tractive effort	
1924	546	..	..	38,048	20,774
1925	513	10	43	39,510	20,268
1926	489	10	34	41,437	20,263
1927	482	10	17	43,883	21,152
1928	467	6	21	44,434	20,751
1929—Sept. 1	481	14	..	44,997	21,639
	Freight Cars			Retired during year	
	No. owned Dec. 31	Added during year	Retired during year		
1924	15,688	..	..	..	..
1925	15,418	102	372	372	..
1926	15,793	839	464	464	..
1927	16,023	442	212	212	..
1928	15,978	298	343	343	..
1929—July 1	15,965	1	14	14	..

westbound. The ability to run manifest freight and passenger trains around these coal trains as they climb the 13 mile grade of 2.40 per cent and the 12 miles of 1 per cent, has materially simplified operations over the summit.

### Equipment Improvement Program

While the roadway and signaling improvement programs were in progress, the equipment was also modernized by the purchase of new rolling stock, retirement of obsolete equipment, and standardization.

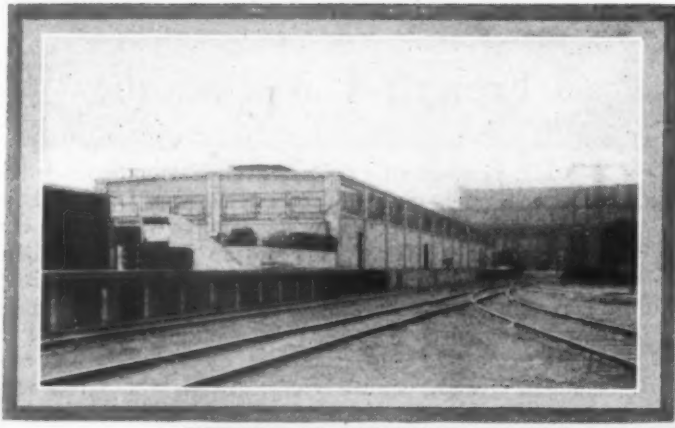
In 1924, cars and locomotives were in bad shape. The average percentage of unserviceable locomotives for the four years ending with 1924 was 26.1 per cent, and of unserviceable freight cars, 8.3 per cent. This situation was brought about by the fact that much of the equipment was antiquated. To remedy this situation, the D. & R. G. W. has spent \$10,641,993 on the improvement of equipment since 1924, with the result that, for the four years ending with 1928, the average unserviceable proportion of locomotives was reduced to 15.5 per cent, and of unserviceable cars to 3.4 per cent. This improvement is graphically illustrated on the accompanying chart. In considering these figures, it should be noted that they also include a large amount of narrow-gauge equipment.

This great improvement was brought about by the expenditure of \$3,361,326 for new locomotives, \$2,452,689 for new freight cars and \$4,594,614 for improvements to and standardization of existing equipment, as well as by the retirement of much obsolete equipment.

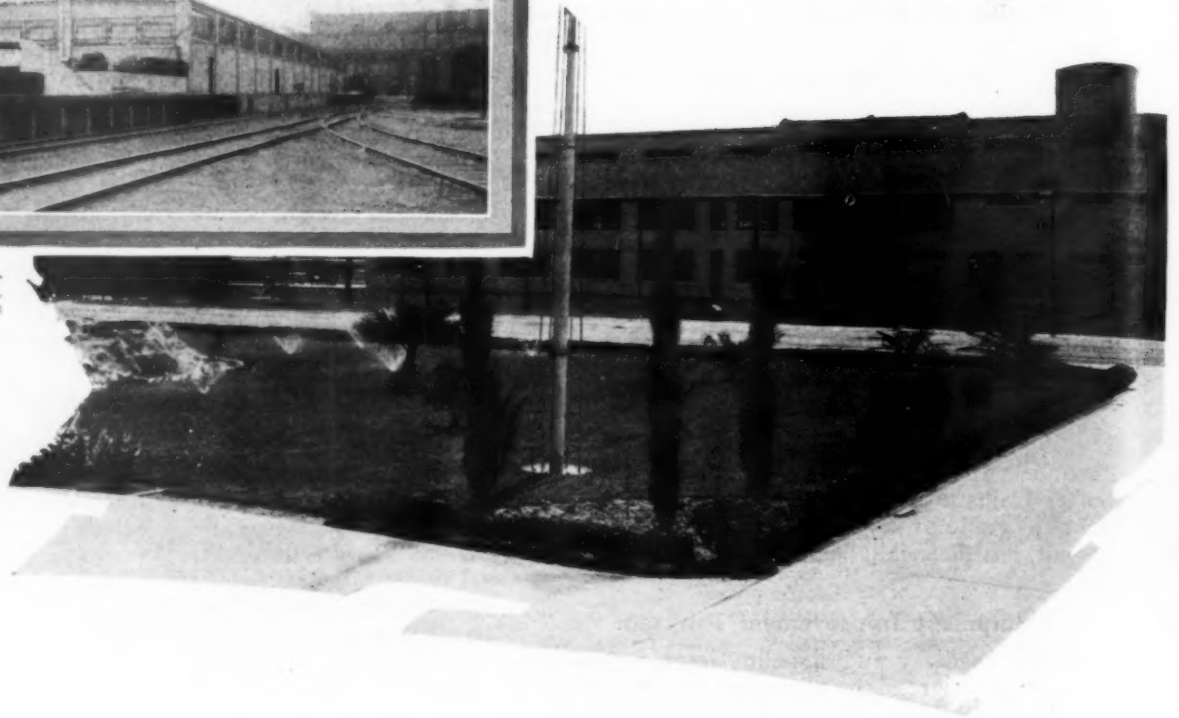
In all, 115 locomotives have been retired, and 54 new ones have been purchased. The average tractive effort was raised from 38,048 lb. in 1924, to 44,997 lb. in 1929, and the total tractive effort was increased from 20,774,000 lb. to 21,639,000 lb., in spite of the fact that the

# Santa Fe Spend Li Supply H

*Big investment in building and e  
tents of all materi with*



The Stores at Al-  
buquerque, N. M.  
(Above) and San  
Bernardino, Cal.



**T**HE present article begins a description of the facilities and methods used by the Santa Fe in supplying its requirements of material for maintaining and operating the property. Excluding coal and fuel oil for locomotives, the requirements for the year 1928, as reflected by the value of materials used,

equipment parts, \$40,122,000. The average value of the stocks carried on hand to protect these requirements, as reflected by last year's figures, is \$23,701,000, divided as follows: For rail, \$4,195,000; for ties, \$3,956,000; for lumber, \$3,430,000; for stationery \$86,500; and for miscellaneous materials, or the strictly store stock \$12,032,000. These miscellaneous stocks are maintained at 44 general, or divisional, stores, and 20 sub-stores, located at 60 points along the 13,168 miles of line embraced in the Santa Fe System, the larger points having inventories and issues as presented in the accompanying table.

## Miscellaneous Material and Supplies

Location	Average Balance	Average Issues	Months' Stock on Hand
<b>DIVISION STORES</b>			
Albuquerque .....	\$733,003	\$178,586	4.1
Arkansas City .....	288,063	65,165	4.4
Argentine .....	277,373	75,193	3.7
Clovis .....	123,936	39,026	3.2
Dodge City .....	83,327	36,151	2.3
Needles .....	179,528	46,485	3.9
Newton .....	289,767	62,879	4.6
La Junta .....	291,513	90,764	3.2
Shopton .....	568,608	118,424	4.8
Temple .....	153,987	37,445	4.1
Winslow .....	310,056	81,899	3.8
<b>GENERAL STORE</b>			
Cleburne .....	951,697	230,473	4.1 2.9 *
San Bernardino .....	1,573,067	405,788	3.9 2.9 *
Topeka .....	3,476,050	959,528	3.6 2.5 *

\* Number months' stock on hand based on average issues, including transfers.

amounted to \$59,591,000, divided as follows: Rail, \$8,872,000; ties, \$5,295,000; lumber, \$4,107,000; stationery, \$1,193,000; and miscellaneous supplies and machine and

## Miles of Concrete Roads Built

The store houses of the Santa Fe challenge attention for their adequacy, their substantial construction, the conveniences afforded, and their finished appearance. It is probable that the Santa Fe has invested more money in stores facilities and equipment than any other road. There is much reinforced concrete and steel and many miles of fine pavement. There are flower gardens, and the equipment of trackless cranes and haulage devices is the largest of any railway stores department in the country. Over 90 per cent of all miscellaneous materials used on the

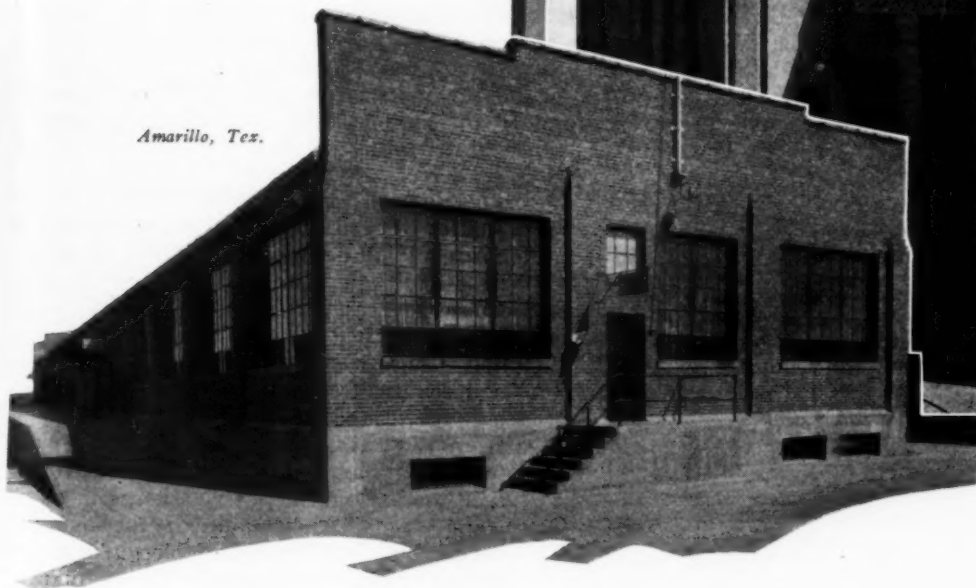


# nd Liberally for Its oly Handling

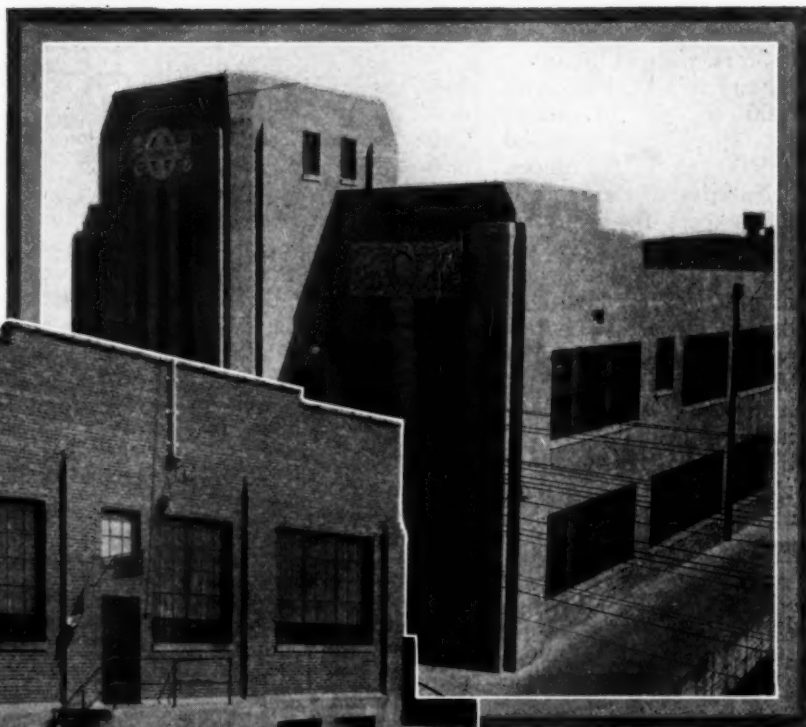
uilding and equipment—Handle nine-  
material with power machines

## Part I

Amarillo, Tex.



Richmond, Cal.



Santa Fe are handled in part or entirely by some sort of mechanical device.

### A Hundred Power Units

Many store departments consider themselves well equipped when the quantity of their material-handling machinery reaches a half-dozen units. The Santa Fe stores department has no less than 99 self-propelled power units comprising 16 locomotive cranes of from 10 to 25 tons capacity, one 5½-ton Burro crane, 11 electric-type tractor cranes of 1½ to 3 tons capacity, 37 electric and gasoline tractors and no less than 34 automobile trucks of from 1 to 5 tons capacity, all of which were purchased new for the department, and are well maintained and well supplied by up-to-date fireproof garages. This equipment, which does not include similar equipment at the reclamation plant, is distributed as follows:

Towns	Burro Crane	Locomotive Cranes	Tractor Cranes	Auto Trucks	Electric and Gasoline Tractors
Albuquerque, N. M....	..	1	1	1	4
Amarillo, Tex. ....	..	..	1	1	1
Argentine, Kan. ....	..	1	..	1	1
Arkansas City, Kan....	..	2	..	1	1
Bakersfield, Cal.....	..	..	1	1	..
Barstow, Cal. ....	..	..	..	1	..
Calwa, Cal. ....	..	1	..	1	..
Chanute, Kan. ....	..	..	..	1	..

Chicago, Ill. ....	..	..	3	..
Cleburne, Tex. ....	..	1	3	3
Clovis, N. M. ....	..	..	1	1
Emporia, Kan. ....	..	..	1	..
Gallup, N. M. ....	..	..	1	..
La Junta, Col.....	2	..	1	..
Needles, Cal. ....	..	..	1	..
Newton, Kan. ....	3	1	1	3
Ottawa, Kan. ....	..	..	1	..
Redondo Junction, Cal.	..	..	1	..
Richmond, Cal. ....	..	1	1	3
San Bernardino, Cal...	2	2	2	5
Shopton, Iowa ....	1	..	..	1
Temple, Tex. ....	..	..	1	..
Topeka, Kan. ....	1	3	3	4
Wellington, Kan. ....	..	..	1	..
Winslow, Ariz. ....	..	..	1	1
Wichita, Kan. ....	..	..	2	1
Total .....	1	16	11	34

### The Topeka Plant

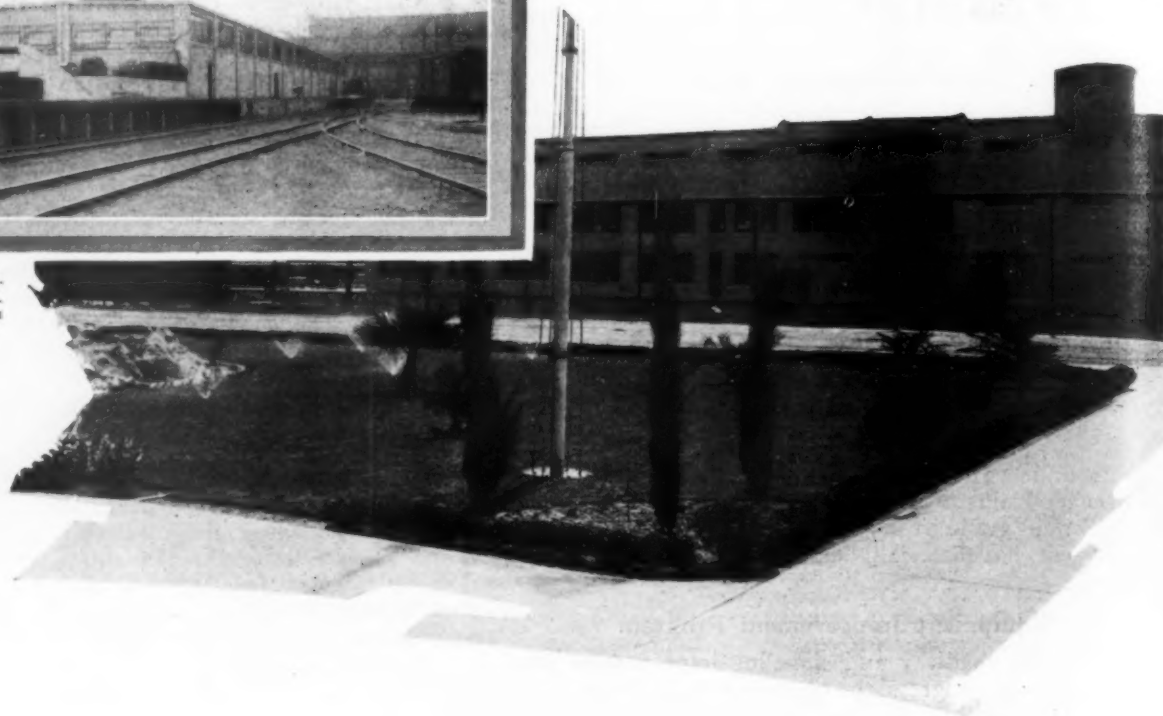
The Topeka, Kan. stores are old, but invite attention because they are the general stores and the largest center of supply activity on the system. A \$3,475,000 stock of miscellaneous material and supplies is carried at this point, while an average of \$1,400,000 of stock is issued each month, consisting of \$960,000 of materials issued directly to the mechanical, operating and maintenance departments, and \$440,000 transferred each month to other stores. Considering only the supplies issued for immediate use, the figures represent a turnover of the stock once every 3.6 months. If the transfers to other

# Santa Fe Spends L Supply H

*Big investment in buildings and  
tenths of all material with*



The Stores at Al-  
buquerque, N. M.  
(Above) and San  
Bernardino, Cal.



**T**HE present article begins a description of the facilities and methods used by the Santa Fe in supplying its requirements of material for maintaining and operating the property. Excluding coal and fuel oil for locomotives, the requirements for the year 1928, as reflected by the value of materials used,

equipment parts, \$40,122,000. The average value of the stocks carried on hand to protect these requirements, as reflected by last year's figures, is \$23,701,000, divided as follows: For rail, \$4,195,000; for ties, \$3,956,000; for lumber, \$3,430,000; for stationery \$86,500; and for miscellaneous materials, or the strictly store stock \$12,032,000. These miscellaneous stocks are maintained at 44 general, or divisional, stores, and 20 sub-stores, located at 60 points along the 13,168 miles of line embraced in the Santa Fe System, the larger points having inventories and issues as presented in the accompanying table.

## Miscellaneous Material and Supplies

Location	Average Balance	Average Issues	Months' Stock on Hand
<b>DIVISION STORES</b>			
Albuquerque .....	\$733,003	\$178,586	4.1
Arkansas City .....	288,063	65,165	4.4
Argentine .....	277,373	75,193	3.7
Clovis .....	123,936	39,026	3.2
Dodge City .....	83,327	36,151	2.3
Needles .....	179,528	46,485	3.9
Newton .....	289,767	62,879	4.6
La Junta .....	291,513	90,764	3.2
Shopton .....	568,608	118,424	4.8
Temple .....	153,987	37,445	4.1
Winslow .....	310,056	81,899	3.8
<b>GENERAL STORE</b>			
Cleburne .....	951,697	230,473	4.1 2.9 *
San Bernardino .....	1,573,067	405,788	3.9 2.9 *
Topeka .....	3,476,050	959,528	3.6 2.5 *

\* Number months' stock on hand based on average issues, including transfers.

amounted to \$59,591,000, divided as follows: Rail, \$8,872,000; ties, \$5,295,000; lumber, \$4,107,000; stationery, \$1,193,000; and miscellaneous supplies and machine and

## Miles of Concrete Roads Built

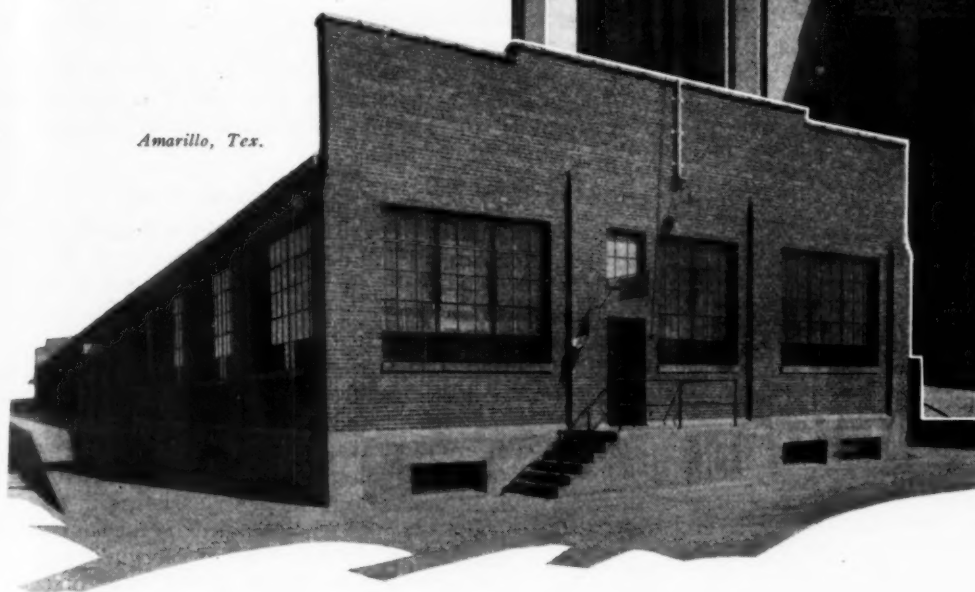
The store houses of the Santa Fe challenge attention for their adequacy, their substantial construction, the conveniences afforded, and their finished appearance. It is probable that the Santa Fe has invested more money in stores facilities and equipment than any other road. There is much reinforced concrete and steel and many miles of fine pavement. There are flower gardens, and the equipment of trackless cranes and haulage devices is the largest of any railway stores department in the country. Over 90 per cent of all miscellaneous materials used on the



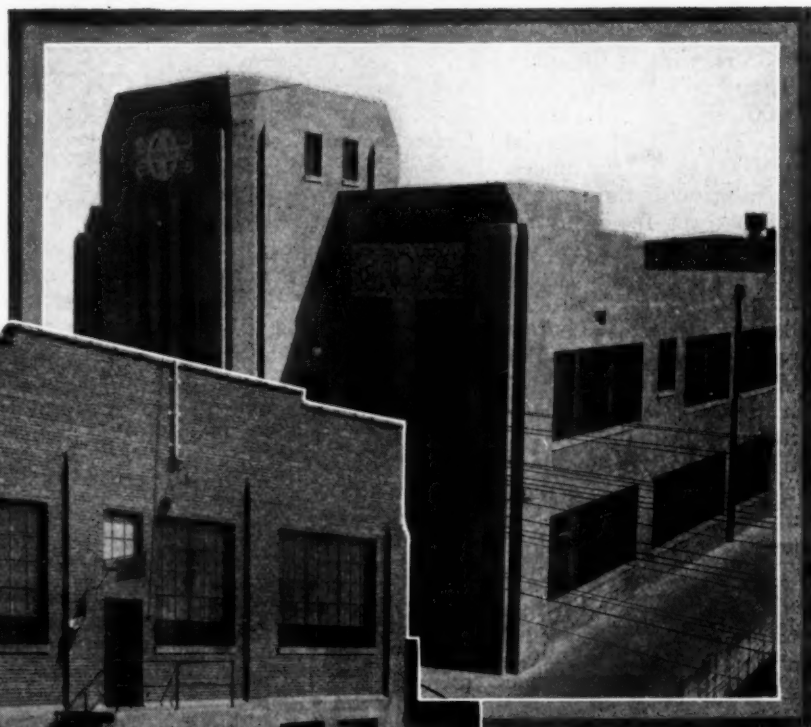
# Liberal for Its Handling

ding and equipment—Handle nine-  
teria with power machines

## Part I



Amarillo, Tex.



Richmond, Cal.

Santa Fe are handled in part or entirely by some sort of mechanical device.

### A Hundred Power Units

Many store departments consider themselves well equipped when the quantity of their material-handling machinery reaches a half-dozen units. The Santa Fe stores department has no less than 99 self-propelled power units comprising 16 locomotive cranes of from 10 to 25 tons capacity, one 5½-ton Burro crane, 11 electric-type tractor cranes of 1½ to 3 tons capacity, 37 electric and gasoline tractors and no less than 34 automobile trucks of from 1 to 5 tons capacity, all of which were purchased new for the department, and are well maintained and well supplied by up-to-date fireproof garages. This equipment, which does not include similar equipment at the reclamation plant, is distributed as follows:

Towns	Burro Crane	Locomotive Cranes	Tractor Cranes	Auto Trucks	Electric and Gasoline Tractors
Albuquerque, N. M....	1	1	1	1	4
Amarillo, Tex. ....	1	1	1	1	1
Argentine, Kan. ....	1	1	1	1	1
Arkansas City, Kan....	2	1	1	1	1
Bakersfield, Cal.....	1	1	1	1	1
Barstow, Cal. ....	1	1	1	1	1
Calwa, Cal. ....	1	1	1	1	1
Chanute, Kan. ....	1	1	1	1	1

Chicago, Ill. ....	1	1	1	1	1
Cleburne, Tex. ....	1	1	1	1	1
Clovis, N. M. ....	1	1	1	1	1
Emporia, Kan. ....	1	1	1	1	1
Gallup, N. M. ....	1	1	1	1	1
La Junta, Col. ....	2	1	1	1	1
Needles, Cal. ....	1	1	1	1	1
Newton, Kan. ....	3	1	1	1	1
Ottawa, Kan. ....	1	1	1	1	1
Redondo Junction, Cal. ....	1	1	1	1	1
Richmond, Cal. ....	2	1	1	1	1
San Bernardino, Cal....	2	2	2	2	2
Shopton, Iowa ....	1	1	1	1	1
Temple, Tex. ....	1	1	1	1	1
Topeka, Kan. ....	1	3	3	4	12
Wellington, Kan. ....	1	1	1	1	1
Winslow, Ariz. ....	1	1	1	1	1
Wichita, Kan. ....	1	1	1	2	1
Total .....	1	16	11	34	37

### The Topeka Plant

The Topeka, Kan. stores are old, but invite attention because they are the general stores and the largest center of supply activity on the system. A \$3,475,000 stock of miscellaneous material and supplies is carried at this point, while an average of \$1,400,000 of stock is issued each month, consisting of \$960,000 of materials issued directly to the mechanical, operating and maintenance departments, and \$440,000 transferred each month to other stores. Considering only the supplies issued for immediate use, the figures represent a turnover of the stock once every 3.6 months. If the transfers to other

stores are considered, the figures represent a 2.5-month turnover. This movement of stock has been maintained with but little variation for the last six years.

The main storehouse is a two-story building of sandstone with a basement. It is 65 ft. wide at one end and 36 ft. wide at the other end, and 375 ft. long with 52,000 sq. ft. of inside floor space for material and 9,000 sq. ft. for offices.

The interior of the store is wood, except for iron truss rods which reinforce the floor beams of the second story between posts. The floor is laid with hardwood, however, and the overhead beams are covered with ceiling so that only the truss rods are exposed. There are two rows of posts which have the unusual height of 13 ft. and divide the space into two side lanes 21 ft. wide and 217 ft. long and a third lane of the same length but 21 ft. wide down the center of the building. The shelves are wood. They are built up from the floor to a height of 7 ft., and have a sloping front. For the most part, these shelves are built in the side lanes which leaves the wide center lane open for general operation.

The shelves are painted light gray and all surfaces above are painted white. There are windows in each side wall and the large head room and painted surfaces distribute the light to good advantage. Each floor is also wired with rows of electric lights, set in reflectors

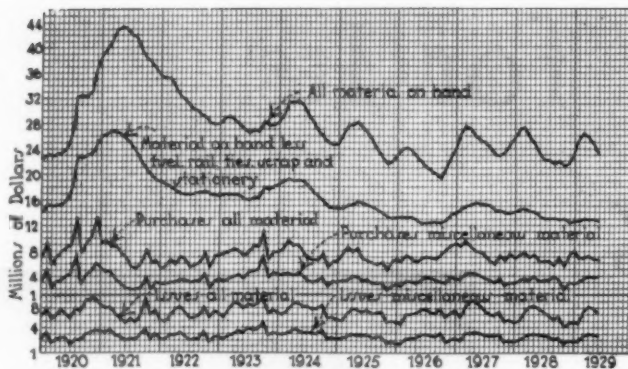


Chart Showing Trends of Purchases, Issues and Inventories of Supplies on Santa Fe Since 1920

in the ceiling and controlled by individual dropcord switches. There are 3 large elevators in the building and ample room is preserved everywhere to operate trailers and trucks conveniently.

All material not held in the main store, such as pipe, locomotive and car castings, construction materials, steel plates, etc., is stored on platforms, in outside racks, in various sheds or on the ground. The storage yards are quite scattered owing to the arrangement of shops. The car-material yard and lumber yard, for example, are fully a half mile from the main store. All this material, however, is arranged in order and stockmen are assigned to each section to care for it. Exposed iron is sprayed to prevent rusting as well as to give it a presentable appearance and the material is also placed conveniently to concrete roads, or to tracks upon which locomotive cranes can operate.

#### Auto Trucks and Tractors Used

Some four miles of concrete road have been built in the Topeka terminal in recent years. Most of this is 12 to 14 ft. wide and the remainder is 8 ft., while for a distance of 300 ft. adjacent to the main store, the pavement is 50 ft. wide.

Three electric crane trucks, 4 automobile trucks and 12 gasoline and electric tractors are constantly operating over these roads, unloading materials from cars, transferring it from one place to another, loading it into cars, delivering it to the various shops or assisting in piling it in place. About half of the material used locally is delivered in part or in whole by mechanical equipment. The equipment is also employed in connection with the general upkeep of the plant, hauling cinders, disposing of scrap lumber, etc. Few places in the country show as much activity in the use of handling equipment as will be found around the Topeka stores on a typical day.

As far as possible the tractor work is divided into zones, and is performed under the direction of the foremen in charge of these



Dipping Castings and Loading Cars at Topeka





zones, but all operations are co-ordinated through a central office. This office is connected by telephone with the different zones and the shops, so that calls for empty equipment or requests for the movement of loads from different sections can be received and handled quickly. The foreman in this office knows the approximate location of all machines at any time and can distribute the equipment promptly to meet the requirements and can also keep such records of the work done and movements made as will promote their efficient use.

The newest phase of these operations lies in the use of the electric crane trucks to do hoisting work not requiring the use of a locomotive crane. These machines are commonly used for lifting loaded trailers into cars or lifting trailer loads of material out of cars, thus saving the time required by laborers to handle the material piece by piece at places along tracks where there are no platforms at car level.

#### Systematic Utilization of Equipment

An example of the systematic utilization of the equipment is found in the work of painting iron and steel products. Because of the large tonnage handled, these items are not brush painted, but are dipped. Vats are installed in the car yard and as unpainted castings are received from manufacturers or the shops, they are put in iron baskets and moved to the dipping vats on iron trailers, pulled by an electric or gasoline tractor. Here a crane truck picks up the baskets, one at a time, dips them and replaces them on the trailers, while the tractor moves forward until all baskets have been dipped, when the trailers are left standing until the paint is dry before the castings are hauled to places of storage or shipment.

Some switching service is unavoidable at Topeka and several shipping platforms are maintained, but in recent years the shipping has been greatly reduced by the haulage equipment, which is operated so that much of the material from cars can be loaded and unloaded without requiring more than one spotting of the cars.

To facilitate loading operations and also to expedite

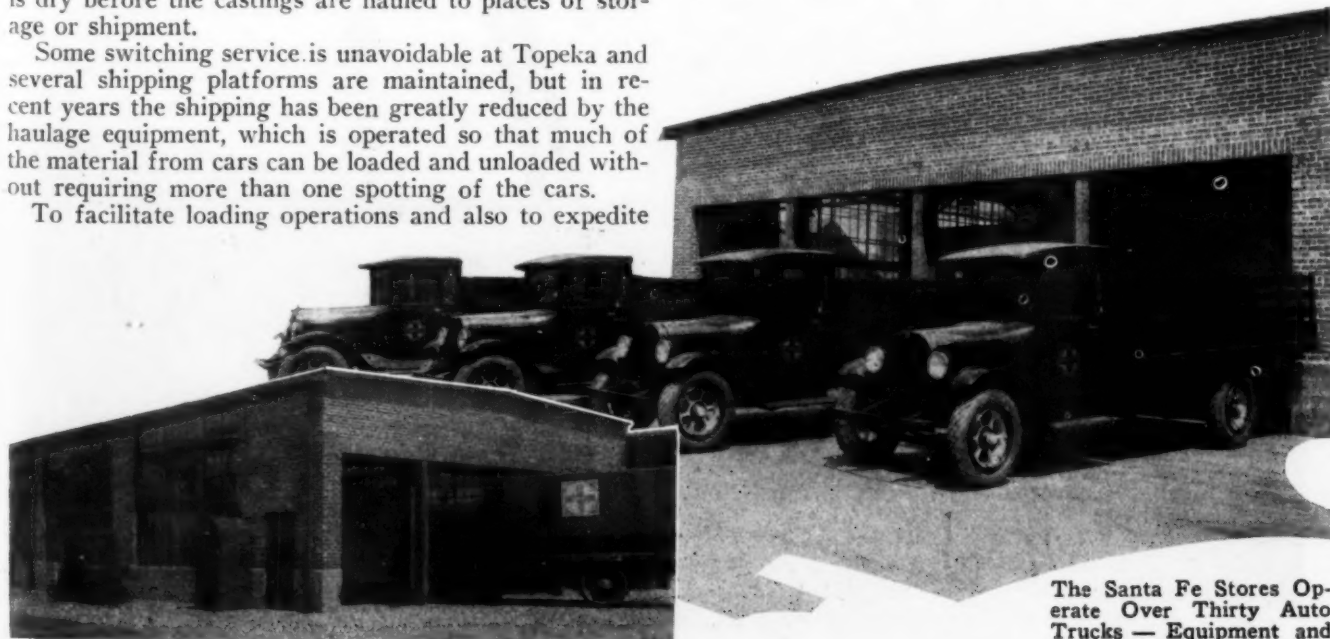


Interior of Topeka Store—Tonnage Board at Right

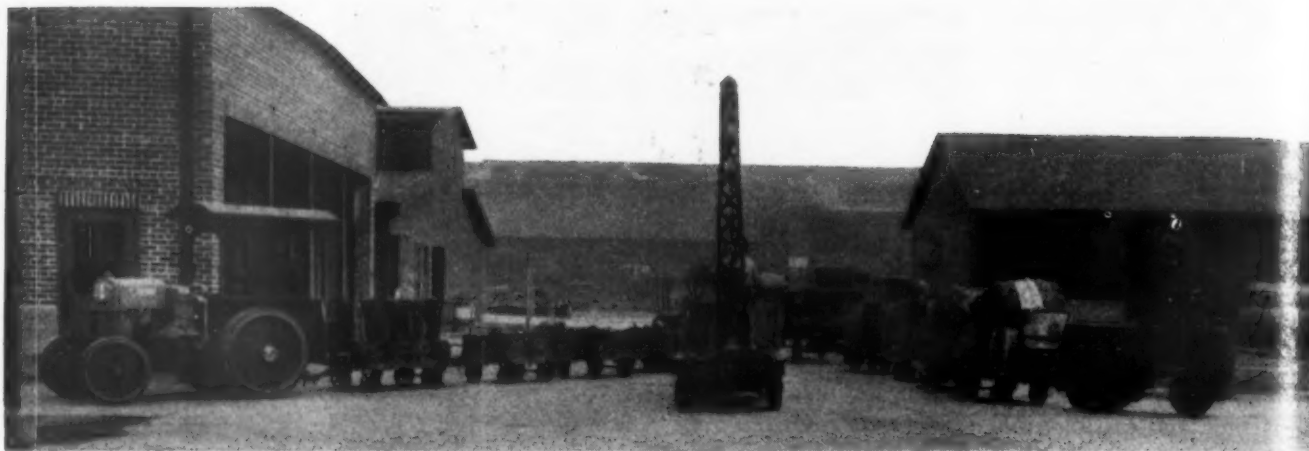
the filling of orders requiring shipping to other points, a tonnage board is maintained in the main store close to the general foreman's office. Each morning and currently through the day, the men in charge of the different sections of material throughout the yard, including the lumber yard, report their estimates of outgoing tonnage for each shipping point in accordance with the requisitions received, and these tonnages are posted under the name of the respective shipping points so that the foreman can determine at a glance what the estimated loading will be for

each station from each section. If the total estimated tonnage calls for more than one car on a certain day, the cars can be secured and a decision can also be made as to the point at which the regular car or additional cars should be switched for loading to reduce handling to a minimum. This board is also an aid to requisition clerks who can, by posting the actual tonnages against each car as loaded, quickly answer wires from outside points asking when specified materials will be shipped. Further this record affords a check on the efficiency of the stockman's work in handling the shipping situation, and to serve in this respect, forms are filled out with the same information and referred to the foremen.

As a further aid in handling the supplies business at Topeka, studies are made to determine the minimum time in which car loads of different materials can be loaded or unloaded. All foremen in charge of sections of stock keep a record of the unfilled orders currently on hand. A total of 300,000 requisitions for material are received at the Topeka store annually, or an average of 1,000 per working day, which is indicative of the volume of work and the confusion that would easily



The Santa Fe Stores Operate Over Thirty Auto Trucks — Equipment and Facilities at Topeka



Gasoline Tractors, Electric Tractors, Crane Trucks, Trailers and Concrete Roads at Work Around the Topeka Store

result if orders were not handled promptly. Recently a check of 5,340 requisitions received at Topeka from eight division stores calling for 21,851 items, disclosed that 60 per cent of the shipments were made within 15 days after the receipt of the requisitions, and 83 per cent, or 18,095 items, were shipped within 30 days. The records of unfilled orders kept by the individual foremen have contributed to securing these results.

#### Accounting for Supplies

As a further means of securing efficiency in the Topeka operations, the book balance of the stock on hand and the turnover in each zone are posted monthly on a consolidated sheet and furnished all foremen so that each one can see how his stock compares with that of the previous month and with stocks of other foremen.

Unlike most railway supply organizations, the Santa Fe stores do all the accounting work in connection with the procurement and disposition of supplies. They are entrusted with the responsibility of preparing not only the requisitions on which materials are ordered, but also the records covering the movement of the materials from the time they are shipped by manufacturers until they are used or sold as scrap. This requires a much larger office force than would otherwise be employed in view of the great amount of detail involved in assuring that the diversity of orders, bills, receipts, transfers, statements and all other accounts, including the annual inventory for the system, are compiled correctly, bal-

anced accurately and issued promptly. A great many advantages to the store department are claimed for the additional work, however, as for instance, the greater accuracy of accounts when made by the forces familiar with the subject matter, the production of balance sheets and other statements desired by the stores for controlling their stock and the opportunities constantly disclosed to readjust supply procedure that would not be appreciated and, therefore, would not be called to the attention of the stores if done elsewhere. With the added clerical work considered, the cost of operating the Topeka plant, determined by dividing the total payroll expense and all direct operating charges by the total material issued for use, is not over 2.9 cents per \$1.00.

Self-Propelled Crane Trucks Figure Prominently in Santa Fe Supply Work



T  
25. A  
interes  
various  
order l  
Pennsy  
brief v  
upon t  
conven

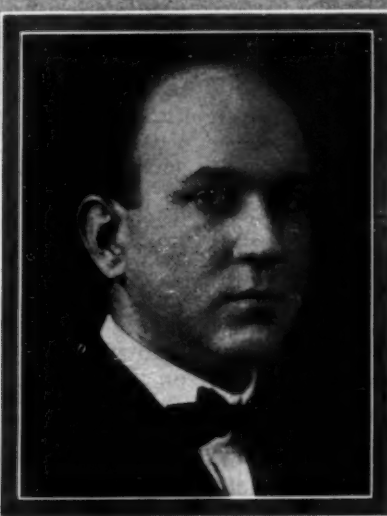
The  
ballot,  
electric  
Gage,  
vice-pr  
Pacific  
execut  
cal eng  
and P  
electric  
L. L.  
Santa  
commi  
Hack.  
Chicag  
sistant  
C. G.  
Centr  
comm  
The

• Com  
Railway





J. C. McElree  
First Vice President



J. L. Minick  
President



J. A. Andreucetti  
Secretary and Treasurer

## Electrical Men Meet in Chicago<sup>\*</sup>

*Well attended sessions mark the twentieth annual convention of the Association of Railway Electrical Engineers*

THE twentieth annual convention of the Association of Railway Electrical Engineers was held at the Hotel Sherman, Chicago, October 22 to 25. All of the meetings were well attended and much interest was displayed in the reports presented by the various committees. The first session was called to order by the president, J. L. Minick, assistant engineer, Pennsylvania Railroad, at 10 a.m., October 22. In a brief welcoming address, Mr Minick laid special stress upon the importance of the business sessions of the convention.

### Election of Officers

The officers for the ensuing year, elected by the letter ballot, were announced as follows: J. C. McElree, electrical engineer, Missouri Pacific, president; R. G. Gage, chief electrical engineer, Canadian National, first vice-president; V. R. Hasty, electrical engineer, Union Pacific, second vice-president. Three members of the executive committee were chosen: C. P. Kahler, electrical engineer, Oregon Short Line representing the west and P. J. Callahan, supervisor of car and locomotive electric lighting, Boston & Maine, representing the east. L. L. King, electrical engineer, Atchison, Topeka & Santa Fe was also chosen as a member of the executive committee to fill a vacancy caused by the death of J. J. Hack. Mr. Minick, J. L. Gardner electrical engineer, Chicago, Rock Island & Pacific, R. E. Gallagher, assistant electrical engineer, Louisville & Nashville, and C. G. Winslow assistant electrical engineer, Michigan Central, were chosen as members of the nominating committee for next year.

The first report presented was that of the committee

on illumination. It included numerous tables showing the demand for the various types of lamps used in railroad service. An outstanding feature was a table giving data on typical floodlighting installations in railroad yards. Different types of yards were included, the information compiled making a valuable check in designing such installations. Most of the discussion was concerned with the relative merits of a recently introduced cab lamp designated as S-14, and an older lamp which it was intended to replace, known as the S-17 lamp. The S-14 lamp is a smaller lamp and will in time meet with general favor.

The report on the application of radio to railroad service was brief. It pointed out the progress that had been made in radio communication on freight trains and called attention to the growing interest in the use of radio for the entertainment of passengers on through trains. Apparently there is a real demand for radio on trains by the traveling public, a demand which is affecting the passenger business to such an extent that passengers are leaving one road which does not have radio to go to another which has receiving sets installed. Much of the discussion related to this phase of the report.

### Purchase of Electrical Energy

The report on the purchase of electrical energy concerned itself chiefly with the study of obtaining and handling power contracts for railroad service and an analysis of the various rate structures. It pointed out that an intelligent study of operating conditions would result in a reduction of bills for electrical energy. A single standard contract for all roads apparently is impossible, although the discussion brought out the fact that an effort was being made to establish a rate struc-

<sup>\*</sup>Complete committee reports are published in the October issue of the Railway Electrical Engineer.

ture which would be uniform throughout the country. One way in which the reduction of power bills can be accomplished is through the grouping of loads occasioned by various buildings and facilities not widely separated. A single installation of this kind was cited on one road which resulted in the saving of a thousand dollars a month.

### Power Plants

The work of the committee on power plants was continued along the line of previous years, in that it dealt with the subject of economies of power plant design. This year the committee made a special study of fuels, including oil, pulverized coal and gas. In addition to this, the economy of direct steaming of locomotives and the drafting of locomotives in the round-house, by means other than a steam blower were explained. Most of the discussion related to the drafting of locomotives. It was pointed out that the cost of drafting by a steam blower was approximately one dollar as against six cents for doing the same work by means of an electrically driven fan. Direct steaming for large engine terminals appears to be in favor.

### Motors and Controls

A large part of the report on motors and controls included tables showing various motor sizes for machine tools. Special consideration was given to motor and control equipment for turntables, punch presses and pumping machinery. A requisition form for the purchase of motors was recommended. The committee also presented a general outline of motor specifications and a set of rules covering the care, cleaning, lubrication and testing of electric motors.

An important feature of the discussion concerned the economies possible in the use of high frequency tools. Much interest in these relatively new tools was manifested though only a few had any experience with them. From what was said, it is evident that high frequency tools have a much higher operating efficiency than has ever been obtained with any form of pneumatic tool.

### Train Lighting and Automotive Equipment

The report on train lighting was the longest report presented at the convention. The problem of lighting parked pullman cars was treated at length and a number of solutions were outlined in detail. The modern trend in carlighting towards increased lighting intensities and the demand for more current for refrigeration, water cooling, etc., was reflected in an animated discussion on the subject of positive axle drives, of which five different types were described in the report. One member stated, with regard to the operation of one of these drives in service on his road, that the drive had been installed in February, 1928, and had made about 170,000 miles since that time. Another which had been in service for about one year had made 110,000 miles and a number of others in service brought the total mileage up to about 700,000 miles. All of these are operating successfully with no trouble that could be directly attributed to the drives themselves.

Railway automotive equipment being largely in the development stage, the committee assigned to this subject did not deem it advisable to offer any definite recommendations regarding design and construction. The work was therefore confined to the study of standards for lighting automotive equipment and trailer cars and to a study of battery capacity and the proper method of charging storage batteries for these cars. A table gave data on lighting systems and battery equipment for rail motor cars and trailers.

The greater part of the discussion was devoted to lighting. It was apparent that for trains consisting of four or five cars it is not desirable to take the lighting current from the main power plant battery. An auxiliary gasoline engine-driven generator is best suited to furnish the necessary power for charging the storage batteries for lighting trains and for other auxiliaries such as air compressors, etc. On short trains consisting of a motor car and one trailer, the same battery can be used for starting the main power plant and for lighting the cars.

The major part of the report on locomotive electrical equipment was concerned with the specifications of insulating copper wire used for train control and locomotive lighting. There was relatively little discussion on this report.

### Electric Welding and Heat Treatment

The final report of the convention was that on the subject of electric welding and heat treating. A large part of the report was given over to a description of a modern plant for heat treatment of elliptical and coil springs for locomotive and car use. The matter of heating rivets electrically received some comment. One member stated that his road had installed electric rivet heaters but had not had good results with them. The experiences of others, however, was contrary to this and the feeling was that the failures were the result of improper use of the rivet heaters. The heating of locomotive tires by the induction method was discussed and it was found that a number of roads were using this process with satisfactory results.

### Railway Electrical Supply Men Elect Officers

At the annual meeting of the Railway Electrical Supply Manufacturers Association, held coincident with the convention, the following officers were elected for the ensuing year: John McC. Price, Allen-Bradley Company, Chicago, president; Carlos Dorticos, General Electric Company, Chicago, senior vice-president; Charles Dubsky, Crouse-Hinds Company, Chicago, junior vice-president. On the executive committee, Charles F. Palmer, of the Hollup Corporation, Chicago, was elected to serve for one year and Bernard Hallberg, Trumbull Electric & Manufacturing Company, Chicago, was elected to serve for two years. Three other members of the executive committee elected to serve for three years were L. A. Spangler, Westinghouse Electric & Mfg. Co., Chicago; Wm. N. Lalor Company, Chicago, and E. H. McNeill, Okonite Company, Chicago.

\* \* \*



The Twentieth Century Limited at the South Station, Boston, Mass.



# Jersey Central in Strong Position

*Highly developed industrial area served provides heavy traffic density—Passenger traffic increases*

THE terminal character of the operations of the Central of New Jersey is disclosed in its average freight haul, which in 1928 was but 69 miles, as compared with approximately 150 miles for all roads in the Eastern district. The comparative density of its traffic is shown in its operating revenues per mile of road, \$65,984 in 1928 as compared with approximately \$47,000 as the average for all roads in the Eastern district.

In addition to its importance as a terminal property, the Jersey Central is also one of the important anthracite carriers—anthracite coal composing 22.42 per cent of its tonnage in 1928. It is to only a slightly less degree a bituminous carrier, since it has important soft coal connections and serves a highly developed industrial area. Products of agriculture made up 2.16 per cent of its tonnage in 1928; animal products, 1.06; mine products, 54.28 per cent; forest products, 2.78 per cent; manufactures and miscellaneous, 36.38 per cent; and coal, 3.34 per cent. The Jersey Central, then, is primarily a railroad serving industry and coal mines and

ities along the New Jersey waterfront opposite lower New York and Staten Island, serving a large area occupied by heavy manufacturing industries. Industry is well developed on all its lines in the metropolitan area of New Jersey and likewise in the territory served by

Table II—Revenues and Expenses—First Seven Months

	1929	1928	Inc. or Dec. %
Freight Operating Revenues....	\$25,461,531	\$25,295,561	+ 0.7
Pass. Operating Revenues.....	5,112,953	4,923,969	+ 3.8
Total Operating Revenues.....	32,881,488	32,258,591	+ 1.9
Maint. of Way Expenses.....	3,208,916	3,138,710	+ 2.2
Maint. of Equipment Exp.....	7,171,875	6,830,251	+ 5.0
Transportation Exp. ....	12,624,958	12,465,785	+ 1.3
Total Oper. Exp.....	24,560,011	23,908,818	+ 2.7
Maint. of Way Ratio %.....	9.8	9.7	+ 1.0
Maint. of Equip. Ratio %.....	21.8	21.2	+ 2.8
Trans. Ratio %.....	38.4	38.6	- 0.5
Operating Ratio %.....	74.7	74.1	+ 0.8
Net Ry. Oper. Income.....	\$4,562,563	\$4,786,339	- 4.7

the road in Eastern Pennsylvania. Especially important to the Jersey Central are its connections (and it is of equal importance to them). Of a revenue tonnage of 41,059,520 handled in 1928, a total of 24,897,928, or almost 61 per cent, was received from connections. Of these the Reading, which controls the Jersey Central, and the Baltimore & Ohio and New York Central, which share largely in the ownership of the Reading, are among the more important.

Table I presents comparative figures of selected freight service operating statistics for the first six months of 1929 and for the same period of 1928. It will be noted that there has been an increase of 3.4 per cent in gross, and 1.3 per cent in net ton-miles for the first half of this year, compared with the same period last year. This result bears out well the prediction made by President White last May when he stated that the volume of business handled in 1929 should at least equal that of 1928. It is encouraging, also, to note that this increased volume of business was handled with a decrease in train-hours, whereas train-miles increased in almost equal ratio to gross ton-miles.

Average car-miles per car-day, as is to be expected in the case of a terminal railroad, are not relatively high—15.3 for the first half of 1929; nevertheless this average shows an improvement of 7 per cent over the same period last year. Train speed increased 6.3 per cent to 11.8 m.p.h., and gross and net ton-miles per train hour, respectively, 7.1 per cent to 22,920 and 4.9 per cent to 10,539.

Table II gives a comparison of revenues and ex-

Table I—Comparison of Selected Freight Operating Statistics—First Six Months

	1929	1928	Per cent of change Inc. Dec.
Mileage operated.....	691	691	...
Gross ton-miles (thousands).....	3,079,018	2,979,181	3.4
Net ton-miles (thousands).....	1,415,770	1,397,729	1.3
Freight train-miles (thousands).....	1,590	1,541	3.2
Freight locomotive-miles (thousands).....	1,992	1,950	2.2
Freight car-miles (thousands).....	79,080	76,749	3.0
Freight train-hours.....	134,338	139,143	3.5
Car-miles per day.....	15.3	14.3	7.0
Net tons per loaded car.....	30.8	31.2	2.3
Per cent loaded to total car-miles.....	58.1	58.4	0.5
Net ton-miles per car-day.....	274	261	5.0
Freight cars per train.....	50.7	50.8	0.2
Gross tons per train.....	1,936	1,933	0.2
Net tons per train.....	890	907	2.0
Train speed, miles per train-hr.....	11.8	11.1	6.3
Gross ton-miles per train-hour.....	22,920	21,411	7.1
Net ton-miles per train-hour.....	10,539	10,045	4.9
Lb. coal per 1,000 gross ton-miles.....	154	148	4.1
Loco-miles per loco-day.....	52.8	49.7	6.2
Per cent freight locos. unserviceable.....	15.0	15.9	5.7
Per cent freight cars unserviceable.....	6.1	5.9	3.4

only to a minor degree agriculture and lumbering. Among the commodities which contribute importantly to its tonnage of manufactures may be mentioned petroleum products, cement, iron and steel products, manufactures of the non-ferrous metals, brick, and chemicals.

## Connections and Terminals

The company has extensive tidewater terminal facil-

Table III—Traffic, Revenue and Expenses—1920-1928

	Revenue Tons	Revenue Ton-miles (Thousands)	Aver. Receipts per Ton-mile (Cents)	Operating Revenue	Operating Expenses	Net Railway Operating Income	Gross Income	Deductions from Gross Income	Net Income
1920.....	38,747,619	2,757,747	1.385	\$51,681,799	\$57,493,096	\$8,744,768*	\$786,386*	\$7,071,911	\$7,858,298*
1921.....	31,168,748	2,263,753	1.774	52,418,714	44,181,938	5,235,601	26,895,048	6,653,293	20,241,754
1922.....	30,625,720	2,032,448	1.797	49,488,471	42,197,422	3,375,153	5,900,545	5,897,931	2,613
1923.....	38,380,066	2,619,502	1.681	57,383,653	48,550,288	4,583,235	6,734,494	6,109,082	625,411
1924.....	36,570,695	2,536,759	1.672	55,466,963	39,652,657	10,273,250	12,299,372	6,111,532	6,187,839
1925.....	38,106,483	2,512,913	1.656	55,092,099	41,388,144	7,753,461	9,592,073	5,995,955	3,596,117
1926.....	42,047,165	2,905,667	1.610	60,171,118	45,993,621	8,051,535	10,391,151	6,022,393	4,368,759
1927.....	41,144,984	2,820,449	1.623	58,745,711	43,344,246	10,383,652	12,068,460	6,595,856	5,472,603
1928.....	41,244,328	2,846,678	1.601	58,002,056	42,122,159	9,385,057	12,035,012	5,983,303	6,051,709

\* Deficit.

penses, with expense ratios, for the first seven months of the current year, with the same period last year. An increase in operating revenues of almost 2 per cent will be noted. This increase was offset, however, by heavier expenses—particularly for maintenance of equipment—so that net railway operating income showed a slight decline.

A remarkable condition is shown in the total of passenger revenues. Earnings from this source in the first seven months of 1929 were 3.8 per cent higher than in the same period in 1928. Prior to this year passenger earnings had been decreasing. The turn in the tide is probably ascribable to a variety of causes. The Jersey Central serves a rapidly growing suburban area near New York which is not as easily accessible to the metropolis by motor vehicle as are some other suburban districts. Similarly, it serves populous New Jersey seashore resorts which, in the height of the summer rush, bring highway traffic congestion serious enough to discourage many motorists. Again, the company has made a vigorous bid for passenger business in the territory it serves, an outstanding example being the inauguration of the "Blue Comet" trains between New York and Atlantic City.

The Jersey Central at the end of 1928 had 564 locomotives of an average tractive effort of 38,413 lb. Its standard heavy freight locomotive is of the Mikado type, of which it has 86, with an average tractive effort of 62,583 lb.

In 1928 the company completed the largest single construction project which it has ever undertaken—the high-level, four-track bridge across Newark Bay. A new engine terminal at Bethlehem, Pa., was also placed in service as was a grade crossing elimination project at Perth Amboy, N. J. A grade crossing elimination program at Cranford, N. J., is now in progress and a similar elimination program at Elizabeth, N. J., has been ordered by the Public Utility Commission of New Jersey.

Installations of ties, ballast and new steel rail each year since 1923 have been as follows:

	No. of Ties	Cu. Yd. Ballast	Miles of Main track laid with new rail 135, 130, 100 and 90 lb.*
1923.....	203,131	3,815	76.24
1924.....	232,608	18,569	35.94
1925.....	204,143	17,287	48.32
1926.....	139,801	2,287	44.88
1927.....	123,004	7,501	93.35
1928.....	129,659	16,563	30.39

\* No new 90 lb. rail laid after 1926.

The gross income of the Jersey Central in 1928 was \$12,035,012, of which 22 per cent was derived from non-operating income. Income on funded debt totaled only \$2,946,074, but rent for leased roads was \$2,382,550. Total deductions from gross income were \$5,983,303, gross income amounting to twice these interest and rental charges. Net income totaled \$6,051,709, or 1.8 times the sum necessary to meet the regular dividends of 12 per cent which were paid on the outstanding capital stock.

The company had outstanding at the end of 1928 a total of \$27,436,800 of capital stock and \$61,155,500 of funded debt. The corporate surplus, including the profit and loss credit balance, at the same time totaled \$92,480,390, a sum which exceeded the total capital liabilities—stocks and bonds—by \$3,888,094.

ACCORDING TO THE GOVERNMENT'S RECORDS, 126 French-Canadian families (656 persons) returned to the Province of Quebec from industrial points in the United States during the past summer. The families were moved in accordance with the repatriation scheme of the Colonization Department of the Province, and placed on farms.

## Shippers and Railway Income

THE need and importance of an active interest on the part of patrons of the railroads, in the question of maintaining railroad income on a basis commensurate with the railroads' needs, is the subject of a significant letter which has been sent to the National Industrial Traffic League and to the Shippers' Advisory Boards throughout the country, by Alba B. Johnson, president of the Railway Business Association.

Prefacing his letter with a suggestion of the obvious community of interest between these different organizations and expressing the hope for more intimate interchange of views, Mr. Johnson says:

The regional Advisory Shippers' Boards, though refraining, as we do, from the discussion of rate adjustments, have impressed us as performing a work calculated to increase the participants' appreciation of the truth that cars, to be supplied, must be built, maintained, replaced, improved and multiplied in step with enlarging traffic; that the supply to be satisfactorily distributed and used, must be hauled with adequate power over railways constantly attaining higher standards in every phase of plant and method; and that the provision, upkeep and development of such railways requires revenue sufficient to operate the properties at a margin which will attract capital for progressive improvements—the economy route toward ultimate rate reductions. We are led to believe that this aspect is in the thought of many shippers active in the advisory boards.

No national business body in our country has progressed further than the National Industrial Traffic League in understanding the needs of that adequacy of railway income which is essential to satisfactory facilities and service. The League wisely avoids, as do the Railway Business Association and the Shippers' Advisory Boards, expression of opinion regarding particular rates or schedules. Nevertheless every new-comer in the field of industrial traffic finds himself as a League member immediately in an atmosphere that habitually recognizes foresight in railway preparedness as an essential policy of shippers.

This condition must have been brought about through leadership. Our effort is to identify for cooperation some of those who have most steadfastly and frankly manifested concern in this matter.

### Over-Confidence in the Future

As has been said by one of my colleagues: "You have the travelling and shipping public agog with anxiety about facilities when shortage stares us in the face, as in 1920, and almost wholly oblivious to the future when, for the time being, as now, service is dependable. . . . On danger to railway income, the public blows hot and cold. Just now it blows cold. History warns us that when we are placidly confident an occasion for alarm is hiding around the corner." A plank in our 1929 platform cautions against over-confidence in the railways' financial future. We urge agricultural, industrial, commercial and financial interests and associations to study the problem anew reviving the active cultivation of a more steadfast solicitude and a public-spirited cooperation with the railways and the Interstate Commerce Commission.

In the report of President Hoover's Committee on Recent Economic Changes in the United States the chapter on rail transportation, by Professor William J. Cunningham of Harvard University, contains the following:



"The present policy of betterments cannot long be continued on the average return since 1920. . . . The railways have been financing the greater part of the improvements out of current income or surplus. This source by no means all comes from railway operations. A substantial part is 'other income'—yield from investments in non-railroad property. . . . The net return on the value of railway property has been plainly inadequate since 1920, and unless that return is bettered the carriers may be unable to continue to enlarge their facilities to keep pace with traffic demands. If that time comes, the people of the United States will not then be furnished with adequate transportation."

Whatever one's impression of current financial results, is there not ground for serious apprehension that (1) so eminent an authority can have reached such a conclusion and that (2) shippers have no organized system for testing its soundness or doing anything about it if convinced?

#### Position of the I. C. C.

Although a classic consideration in determining, for regulatory purposes, the reasonableness of any individual rate is "the cost of service," or in other words whether it is "compensatory," the constant adjustment of rates throughout the country goes on mainly with little or no thought of total revenue and income except in cases involving the whole structure for large regions. The Transportation Act imposes upon the Interstate Commerce Commission an initiative in the modification of rates with a view to adequacy of income and hence of facilities and service, but some of the commissioners and others have declared that the initiative of the commission in the matter has been discharged when the carriers in various areas are formally or informally assured that revenue adjustments will be considered. They insist that actual economic studies and rate proposals based upon them are beyond the scope of the commission, beyond its physical limitations. In any event no program arising from anxiety over the railways' financial future has originated with the Commission since 1920, and as a practical proposition it appears that if shippers are to see at work a policy of foresight in the matter of railway preparedness they must look to the carriers rather than to the commission in the first instance.

#### The Railways' Difficulties

The railroads again, are beset with great difficulties. Highly competitive among themselves and variously affected by regional and other conditions, they do not find it easy to unite in the adoption of a revenue standard, much less to stand solidly for it. Hence nothing in the whole situation is so vital as for the shippers as a whole, whatever their own conflicting circumstances, to develop some sort of common purpose and conduct designed to reduce pressure for rate reductions divorced from considerations of railway income.

In our endeavor to diffuse more widely among shippers the anxiety about railway preparedness already felt but not continually expressed by some of them, your cooperation to the extent of introducing us to such individuals will be warmly appreciated.

**WORK FOR THE DEMURRAGE CLERKS.**—On the railroads of Poland, the scarcity of freight cars has led to the adoption of a rule allowing for unloading (or loading) a free time of only eight hours, on cars of 30 tons' capacity or less, a reduction from 10 hours; and for cars of higher capacity, the free time has been reduced from 12 hours to 10 hours.

## N. & W. Efficiency Meeting

**T**HE Norfolk & Western held its annual system efficiency meeting on October 22-23 at Bluefield, W. Va., with an attendance of over 450 delegates, representing all occupations and all parts of the system. Addresses were delivered by several officers of the railway, including Vice-presidents W. J. Jenks and B. W. Herrman, General Manager J. E. Crawford, a number of business men of Bluefield and Joe Marshall, special representative on claim prevention of the American Railway Association. J. B. Baskerville, general claim agent of the railway, acted as chairman of the sessions.

Mr. Jenks, in his address, emphasized the necessity of continued alertness on the part of all employees in order that the railway might continue to make progress. He warned against "a false sense of security and satisfaction," stating that it was "easy to dwell at length upon accomplishments" while ignoring "the equally essential fact that we are still far from perfection." He stated that he saw no indication of the development of any such trait on the part of any one connected with the railway, but wished to call attention to the danger to make sure that it might be avoided.

Mr. Jenks stressed the necessity for alertness in the presence of active competition on the part of other methods of transportation. "Our delays," he said "are less than they used to be, but there is still a great deal of room for future betterment." Most of the failures which occur, he said, are man failures. Hot boxes, he continued, have been greatly reduced, but they still occur—and most of them are the result of carelessness; the same with break-in-twos. The company, he said, was doing everything it could in the way of improving physical conditions, such as reducing gradients, in order to improve performance, but its work could not be effective without the co-operation of the employees.

#### Careful Employee Selection Necessary

He emphasized the importance of exercising care in the selection of employees, calling attention to the fact that when a man is employed he often remains in railroad service for 40 to 50 years. He asked for greater care to avoid loss and damage claims, explaining that the monetary loss resulting from such claims was less important than the irritation caused to the shipper or receiver of freight. He also asked for more careful firing to avoid complaints arising from excess smoke, and to conserve fuel. The aid of employees in reducing highway grade crossing accidents was also sought. Crossings, he continued, should be flagged during switching movements wherever possible and propaganda for safety should be carried into the employees' homes. The necessity for this last was emphasized by an instance which he mentioned of the most serious grade crossing accident which had occurred in recent times, having involved the wife of an employee. He also urged the employees to advertise their railroad and to deal courteously with the public.

#### Competition

Formal discussion at the session was based upon committee reports prepared and printed in advance. Recommendations were grouped under four main headings as follows: Competition, Saving, Prevention and Service.

Under the head of "Competition" there were three

sub-divisions, viz., motor truck, motor bus, and auto tourists. To meet the competition of the motor truck increased speed and improved service on the part of the railroad was recommended. The lack of regulation of these carriers and their ability to make rates to fit specific conditions, whereas railroad rates have no such flexibility, was mentioned and the question raised as to why such vehicles should not be required to maintain regular tariffs, accepting all commodities offered. An acknowledgment was made however, of the vast tonnage which railroads secure which is directly attributable to the manufacture of automotive vehicles.

To meet the competition of the highway motor coach, it was recommended that train service be speeded up as much as advisable and that care be exercised in drawing up schedules to make connections at junction points convenient to passengers. It was said, however, that the chief competitor for passenger business was the private automobile and the advisability of doing everything possible to encourage travel by train was emphasized. It was suggested that the great safety of rail travel and its comparative inexpensiveness when compared to journeys by private automobile be stressed.

The heading "Safety" was sub-divided to include fuel, materials and supplies, and car mileage and many detailed suggestions were given under each category. Prevention was discussed with reference to loss and damage, overcharges and undercharges, and fire, and many suggestions as to the procedure to accomplish such prevention were recommended and discussed.

The discussion on "Service" was grouped under the following needs: Service at stations, on the road, in yards, and in shops. As an illustration of the detail to which recommendations were carried and to show their specific and practical nature, the recommendations advanced under one category, i.e., "Service in Yards" are given in full as follows:

#### Service in Yards

The railroad yard, where freight receives the most handling, should be the place it receives the most careful attention. Here, through the cooperation of all employees and a close observance of the rules, valuable service may be rendered to shippers. Following are some suggestions which have been made by our employees for the improvement of service in yards:

To have efficient service in yards requires the cooperation of every one, from the general agent to the car checkers. Cooperation might mean that the agent's forces will be prompt in furnishing bills and instructions for movements, and that the yard-master will stay on the job, promptly giving the information to the crews; that the yard conductor will stay with his crew and see that the movements are made correctly and carefully; that the brakeman will be on hand to give proper signals and make cuts to the best advantage, and that the engine crews will be on the alert to receive and act on signals promptly.

If a shipment makes scheduled movement over the line and then is delayed after its arrival at the terminal, then its good movement on the road has been nullified and the service rendered on that particular shipment has been made unsatisfactory.

Where the duties of yard crew employees bring them into contact with the public, they should be strongly impressed with the necessity of courteous, accommodating and genial dealings.

An employee giving information about cars should be sure that it is definite and reliable. Impossible or improbable performance should not be promised.

There is nothing that will contribute more toward making a satisfied shipper than that he be able to obtain accurate and dependable information concerning his particular shipment when it has reached a railroad yard.

Inquiries concerning the movement of cars should be answered promptly.

Yard employees at connections should see that cars are delivered to connecting lines without delay. They should also see that prompt deliveries are made to and from industries, and, above all, that the cars are properly switched so as to avoid damage to lading.

Yard employees are inclined to handle their work in an established routine, which probably enables them to get it done in a manner which suits the yard, but does not take into account that it is sometimes not only necessary but highly desirable to break up an established custom in order to render a service that will please a customer. Rendering pleasing service often increases business, and especially at competitive points.

Another common failing of yards is to pass on to the next terminal cars without bills, or incorrect bills, etc. Wherever such an error is caught is the place to correct it, even if it means cutting the car out of the train, because the error must be corrected somewhere and the proper place is where it is first found.

Satisfactory yard service requires a good knowledge and understanding of general rules by yard employees and a strict observance of these rules. It also requires the observance of all special instructions relating to yard operation, safety and the proper handling of engines and trains.

Clear, definite signals, in plain view of the engineman, and a disposition on the part of the engineman to thoughtfully and carefully observe them are necessary to prevent the loss in damage to freight and equipment.

The engineer should operate his engine according to the signal he receives from the yard crew.

The conductor in charge of a switching crew should give his "kick" signals according to the distance the cars have to move before coming into contact with other cars. The conductor should be familiar enough with the tracks in his yard to know the tracks on which the cars will coast fastest, and he should be able to judge whether a medium "kick," a very light, or a hard signal is required.

Yard crews should work together in organized team work. Every man should be interested in his work and give first thought to his own job.

Crews, engines and trains ready for movement without delay when called are other essentials of good service in yards.

Special attention should be given to all loaded cars so that they are properly protected by seal to prevent loss and theft.

All cars placed for loading or sent out on orders should be properly inspected and carded and cars of the proper class should be furnished for each commodity.

Local officers should visit yard crews while on duty as often as possible and receive any suggestions they may offer regarding their work. Often a man thinks of an improvement in his work while on the job which would not occur to him while idle.

The required records should be kept in an accurate and dependable condition.

Close cooperation between the individuals of yard crews and between the crews and yard officers, track forces and shop forces is a necessity to service in yards.

\* \* \*



An Erosion Butte on the New Mexico Lines of the Atchison, Topeka & Santa Fe



## Rock Island Re-equips Three Fast Trains

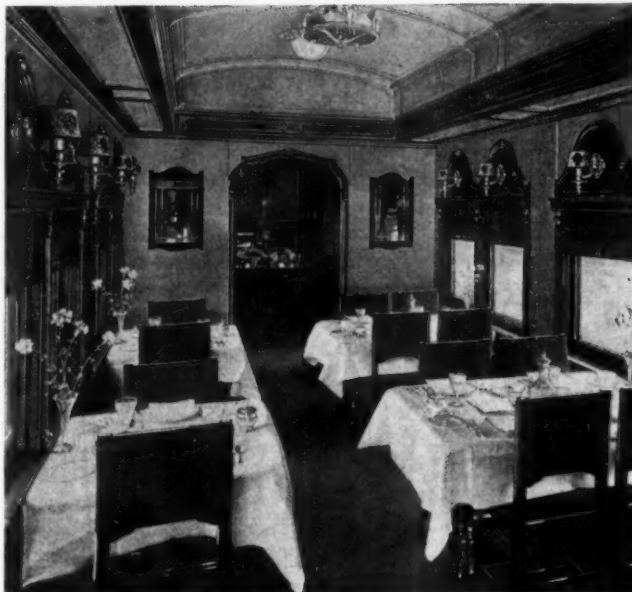
**T**HREE fast passenger trains of the Chicago, Rock Island & Pacific, including the Golden State Limited, the Rocky Mountain Limited and the Iowa-Nebraska Limited, have been provided recently with new equipment, including both cars and locomotives. The Pullman equipment alone includes 52 cars, in addition to the new baggage cars, baggage-smokers, smoking-room coaches, chair cars, diners, club cars and club-observation cars. The motive power consists of five new Mountain-type locomotives. The provision of this equipment will enable the Rock Island to give the latest modern conveniences and service to passengers who ride these trains between Chicago and California, Colorado and the Midwest.

The new locomotives, built by the American Locomotive Company, are of the Mountain type of similar proportions and design to previous Rock Island 4000-class locomotives, except for the addition of type BK mechanical stokers and Worthington feedwater heaters of the latest design. The locomotives develop a tractive force slightly over 50,000 lb., have 28-in. by 28-in. cylinders and weight 254,000 lb. on the drivers. Other special equipment includes the application of Nicholson thermic syphons and the Ohio low-water alarm. Lubrication is provided for by means of 187 Alemite fittings on each locomotive; in fact all spring rigging connections and all moving parts, except the rods, are fitted for this form of pressure lubrication.

The club, or lounge cars are 84-ft. all-steel cars notable for the completeness and beauty of their furnishings, being identical with those brought out earlier in the year and described in the *Railway Age* issue of April 20, page 907.

### Special Lighting Fixtures and Decoration in Diner

The dining cars, while containing no innovations as far as general proportions and equipment are concerned, combine beauty and good taste in interior decoration to an unusual degree. The interior finish in the dining car is Spanish in treatment and this is brought out by making use of natural black walnut combined with a painted side wall. The window trim is of natural color walnut in which shaped mouldings for the window header, and carved wood pilasters are placed on either side of the window. A natural walnut deck rail is used, dividing the wall color from the ceiling color. The ceiling is painted a light cream color which har-

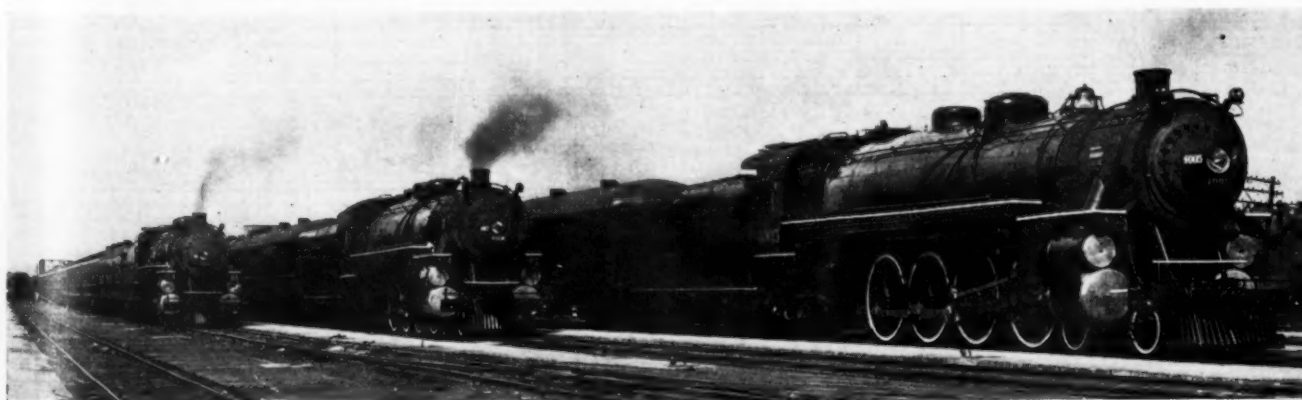


The Interior Decorations and Equipment of the New Rock Island Diners are Spanish in Character

monizes with the wall color, which is tan in tone. Attractive framed mirrors are placed at either end of the dining room, two on each bulkhead, and they are of the same general Spanish motif. A buffet, which is also of Spanish design is placed at the bulkhead nearest the pantry.

Special designs of lighting fixtures are used in this car and they too are of the Spanish type. The ceiling fans, ceiling fixtures and one-light brackets are all of the same motif. The one-light brackets are placed over each window and have mica shades on which a small replica of a Spanish shield is placed, the color on this shield being complementary to the walls and interior furnishings. The lighting fixtures were designed by the Safety Car Heating and Lighting Company.

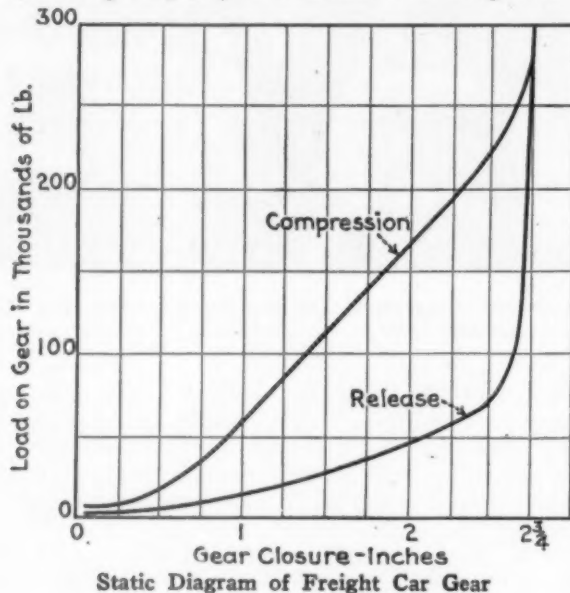
The general tone of the interior furnishings is of blue and gold which makes a pleasing contrast to the tan walls and natural walnut trim. A blue and gold carpet is used, with a small figure of gold placed on a blue background. The seat covering is of blue mohair with a small frieze pattern. The window shades are of blue with a small gold pattern. The chairs and tables are also designed to be in keeping with the rest of the car and are finished in walnut to match the window trim.



Three Newly-Equipped Rock Island Fast Passenger Trains at La Salle Street Station, Chicago

## Edgewater Lubricated Friction Draft Gear

THE Edgewater Steel Company, Pittsburgh, Pa., has been engaged for some time in the development of the ring-spring draft gear and has recently produced an improved form of this gear for which several advantages are claimed. The most important features of the gear are its light weight, made possible by the application of the ring-spring principle; the high capacity in relation to its weight and the



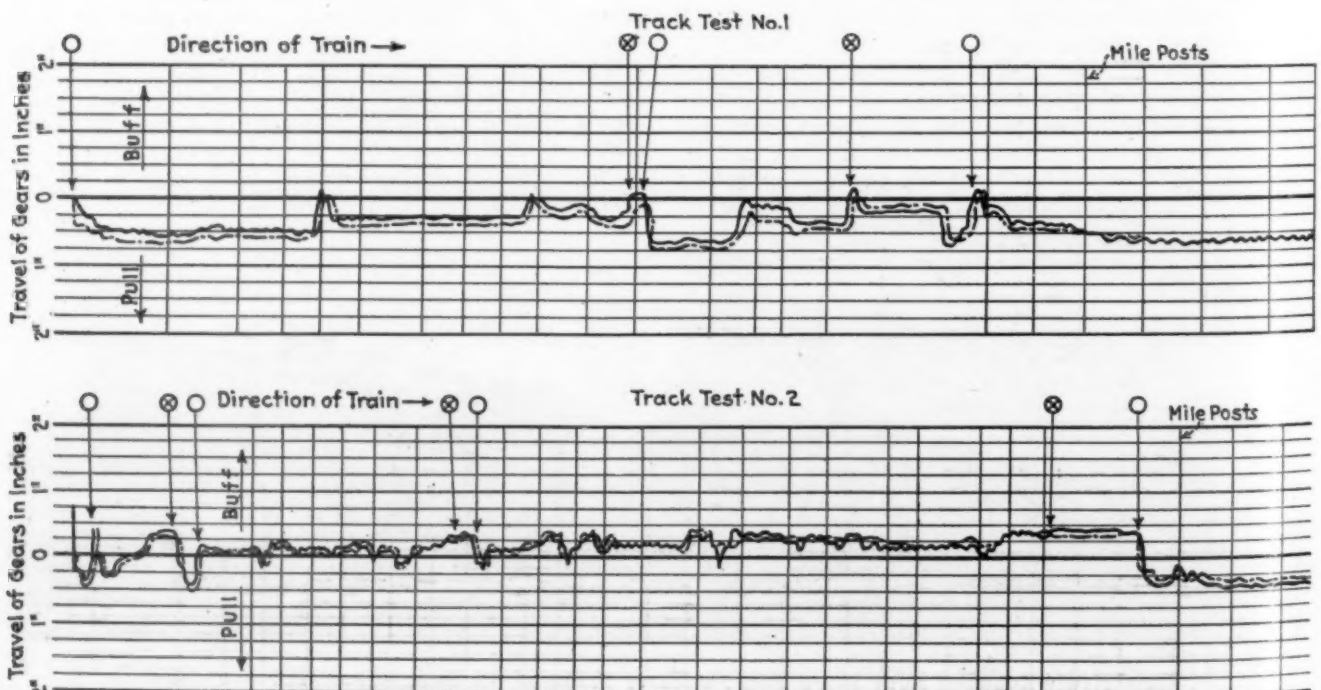
fact that the principal parts of the gear are packed in a lubricant. The gear weighs 250 lb., and has a capacity of 27,000 ft. lb., which is equivalent to a 33-in. free drop of a 9,000-lb. tup. This gear is one of ten makes that were tested at Purdue during the 1929 draft gear tests and on the endurance test showed an average energy input of 134,986,100 ft. lb.

The gear consists of a suitable design of ring-spring enclosed in a pressed-steel housing which retains the ring-spring under some initial compression. An important feature of its construction is that the gear is packed during manufacture with wool waste soaked in graphite grease. Provision is made in the housing design for replenishing the lubricant when necessary. The flanges on the sides of the housing guide the gear in the pocket. The ring-spring is the result of systematic efforts, extending over a number of years, to produce a spring in which all fibres would be stressed uniformly.

The ring-spring consists of a number of outer and inner solid rings, each ring co-acting with adjacent ones along conical surfaces. There are two inner split rings used in the head end of the spring which serve to soften the action at the beginning of the stroke. When axial pressure is applied, the rings telescope into each other, the outer rings being subjected to practically uniform tensile stresses, and the inner ones to equally uniform compression stresses. Thus the outer rings will expand and the inner rings will compress, and each conical surface will telescope into the adjacent one a certain distance in the axial direction. The travel taking place between each pair of conical surfaces, multiplied by the number of such surfaces forms the total travel of the spring.

The amount of work that can be stored in a ring-spring at given maximum stress is much higher per cubic inch or per pound of steel, than for any other type of spring. The amount of work done during the compression of the spring is further increased by the amount required to overcome friction between conical surfaces. Conversely the work returned during the recoil of the spring is less than the amount stored in it during compression on account of the friction between the rings. The working of the ring-spring thus involves the absorption by friction of a considerable amount of work during each cycle of operation.

The rings are manufactured from a chromium steel, rolled down to round bars. A process of shearing has been developed so as to provide blanks of proper weight



Diagrams of the Movements of the



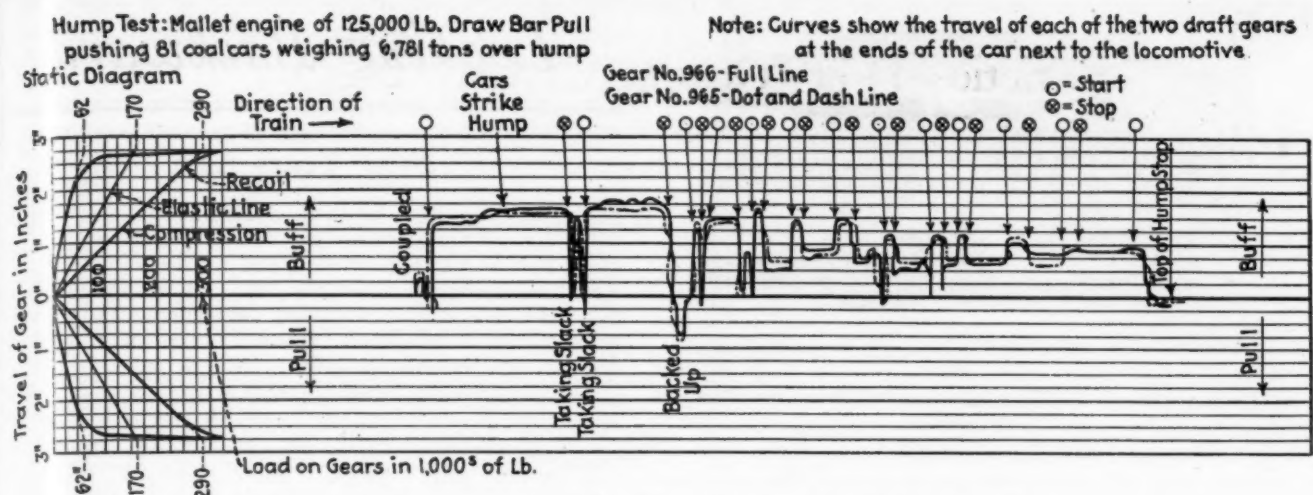


Diagram of the Movements of the Edgewater Gear in a Hump-Yard Test

cross sheared from these bars, to make the rings. These blanks, after being heated, are formed into "doughnuts" and then rolled, at the same heat, into rings of the desired diameter and cross section. In this forging and rolling process, which is very similar to that used in some of the modern plants in the manufacture of locomotive tires, rolling is done on all faces of the rings at the same time. This universal rolling produces high physical qualities in the finished product.

After the rolling operation is completed, the rings are carefully heat-treated, quenched in oil and drawn in a salt bath. Each individual ring is tested for Brinell hardness before assembling.

Because of the characteristics of the ring-spring, it forms a draft gear in which:

- 1—A drop-test capacity of over 33 in. free fall of a 9,000-lb. tup is obtained.
- 2—The work done during the compression of the gear exceeds 27,000 ft. lb., without creating an ultimate resistance of over 300,000 lb.
- 3—The work is taken up mainly through very powerful spring action, the frictional resistance being secondary, whereby a positive release is assured.

4—The gear has no dry friction which produces rapid wear, irregular action, and high sill stresses.

5—The contact surfaces are lubricated and safe material stresses are used, resulting in a minimum of wear and a long life.

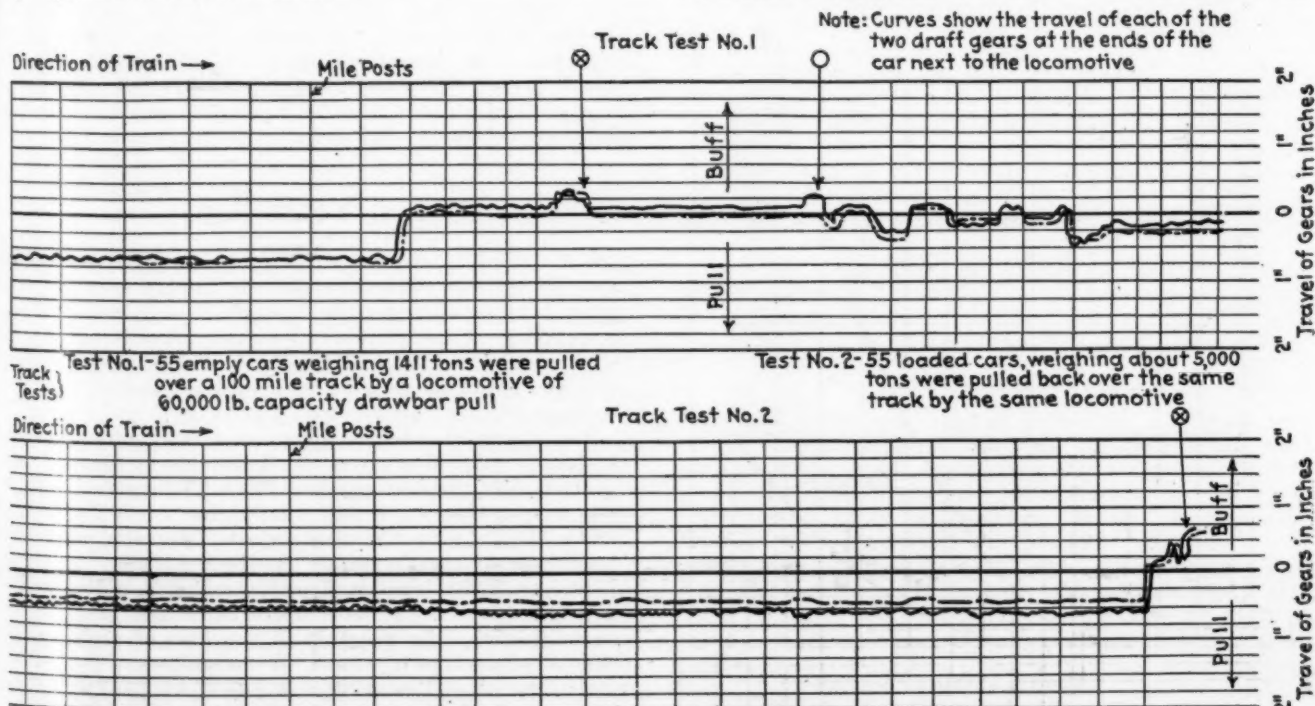
6—No castings are used, all parts are of forged steel, all wearing surfaces are made of heat-treated alloy steel.

7—Due to its high capacity as a spring, the ring-spring draft gear does not creep or close under the influence of sustained draft or buff and therefore has reserve capacity for any emergency.

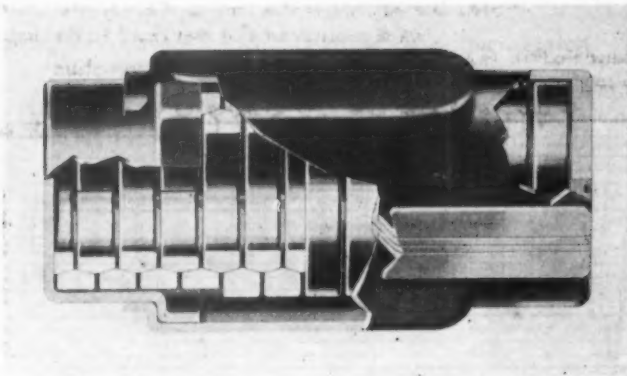
The performance of the Edgewater ring-spring draft gear is illustrated by the accompanying drop and static diagrams.

The drop test diagram was made with the standard 9,000-lb. tup, and the gear under this test shows a capacity of 33 in. free fall, or 27,000 ft. lb. The total travel is 2-3/4 in. The compression and release curves are uniform indicating that the action of the gear is not jumpy or irregular.

The static diagram shows a force of 300,000 lb. required to close the gear. This test was made under a standard testing machine and the smoothness of the



Edgewater Gear in Road Train Service

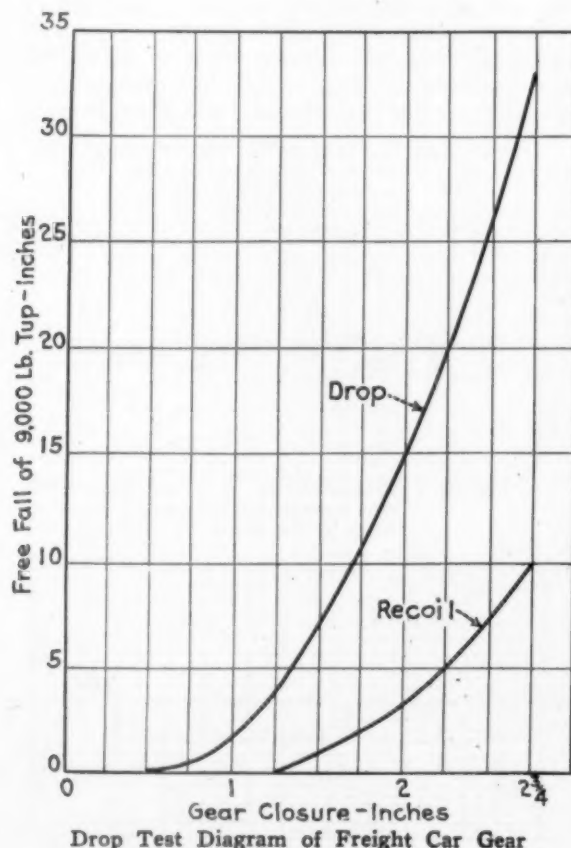


Sectional View of the Ring Spring Draft Gear Showing Its Construction

compression and release curves illustrates the uniformity of the gear.

The accompanying set of chromograph curves were made with Edgewater gears installed in a hopper car placed between the tender and the remainder of a train. The hump-test curves were made while a Mallet type locomotive with 125,000 lb. drawbar pull was pushing 81 coal cars over a hump. As the cars were being dropped off into the classification yards, the pressure of the buff gradually decreased. By following the peaks of the curves horizontally across to the static diagram on the left the buffing pressures can be readily approximated.

Track-test curves Nos. 1 and 2 were taken from a test run made over 100 miles of track. The draft gears under test were in the first car directly between the tender and the remainder of the train. On curve No. 1, the train consisted of 55 empty cars weighing 1,411 tons and on No. 2, 55 loaded cars weighing 5,000 tons.



## Looking Backward

### Fifty Years Ago

The supreme court of Pennsylvania has decided that the county of Allegheny must pay for all private property on trains and in warehouses destroyed by the Pittsburgh mob during the railway riots of July, 1877. It has been estimated that the claims against the county aggregate \$7,000,000, which includes the Pennsylvania Railroad losses of \$5,600,000.—*Railway Age*, October 30, 1879.

The joint executive committee, at a meeting in New York on October 22, unanimously resolved to advance the rate on eastbound freight from Chicago to New York, to the following figures: Grain, 40 cents; live hogs, 55 cents; cattle, 65 cents; dressed beef, 88 cents. This is an advance of 5 cents per 100 lb., and is warranted by the impossibility of procuring cars to meet the demand, by the approaching close of water navigation, by the fact that unprofitable rates have prevailed during the past season, by the increase in the operating expenses consequent on the increased cost of materials and by the large advance in the price of grain and other products transported.—*Railway Age*, October 30, 1879.

### Twenty-Five Years Ago

Grant Hall, heretofore assistant superintendent of rolling stock of the Canadian Pacific lines east of Fort William, has been appointed assistant superintendent of motive power of the western lines at Winnipeg. C. H. Markham has resigned as vice-president and general manager of the Southern Pacific lines west of El Paso and south of Ashland to become general manager of the Guffey Petroleum Company of Beaumont, Tex.—*Railway Age*, November 4, 1903.

The great weight of testimony given in answer to inquiries concerning dispatching practices confirms the natural reasoning that when an order is sent to two approaching trains to meet and pass at a given station, it should also be sent to the operator at the meeting point, who should thereupon put out a reminding signal. Of the 34 answers received to the question, "Does the use of the middle order tend to greater safety in train movement?" only two replied in the negative. The general managers of eight roads which are not at present using the middle order have the courage to express themselves in favor of its use as a protection against head-end collisions.—*Railway Age*, November 4, 1904.

### Ten Years Ago

The strike of railroad employees in England, Scotland and Wales, was suddenly ended on Sunday afternoon, October 5, by an agreement between the Government and representatives of the employees' unions. It was agreed that work should be resumed immediately and that wages should be stabilized at the present level until September 30, 1920.—*Railway Age*, October 27, 1919.

The Cummins bill, providing for a reorganization of the system of railroad regulation and also for the gradual reorganization of the railroads into 20 to 35 competing systems, was reported to the Senate on October 23 in the form of a new bill, including the many important revisions which have been made by the Committee on Interstate Commerce since it was originally introduced on September 2 as the work of a subcommittee. The most important change made by the committee was the adoption of the idea of establishing a definite percentage of return for the guidance of the Interstate Commerce Commission in rate-making.—*Railway Age*, November 6, 1919.



## Communications and Books

### English, to Become International, Needs Simplifying

JOLIET, ILL.

#### TO THE EDITOR:

The writer has read with great interest the letters that have appeared recently in reference to international or universal languages.

Judging from the lessons of the past, the day of a universal language for the civilized world is probably many, many years in the future. The world was within reaching distance of an universal language at the age of the Caesars. Latin was the language of court and camp and to a lesser extent the language of literature and commerce. Its use, however, declined and fell with the decline and fall of the Roman Empire and was finally displaced by the languages of the more virile races.

There would be hope for a greatly extended use of the English language if it were not so disagreeably hard to learn. The spelling gives no true indication of the pronunciation and the pronunciation little indication of the proper spelling, with the result that foreigners have great difficulty in acquiring a workable use of it. Even one native born is sentenced to a life partnership with a dictionary.

Our language could be rendered practically phonetic without the addition of any letters or symbols to our present alphabet. The use of digraphs to represent certain vowel sounds and the standardization of the sounds of vowels, digraphs and consonants would be all that is necessary. No new type would be required nor would any alterations need to be made in type-writers, linotype or printing machinery.

If English was simplified as described above, more foreigners could learn to use it and its spread would probably become very much more rapid. Also more of those born in English speaking countries would learn to use it correctly and effectively. Our high school graduates have spent at least a year and a half in extra training in the use of our language that students living in countries having a language that is phonetic, or nearly phonetic, escape.

Our grammar is one of the simplest, our vocabulary is one of the most extensive, our language is one of the most expressive and is backed by a great literature, but the long time and patient drudgery required to gain a passable facility in its use at all times hinders and in many cases prevents its extension among the other nations.

The writer believes that our refusal to revise our language toward the basis of "one symbol one sound" is an imposition on our coming generations who will have to learn to use it. It would be kinder to correct it before offering it to others.

F. C. STUART.

### New Book

*Record and Index. Published by the American Society of Mechanical Engineers, 29 West Thirty-Ninth street, New York. 432 pages, 6 in. by 9 in. Black board binding.*

As a historical record of the activities of the American Society of Mechanical Engineers during the year 1928, *Record and Index* combines all of the reference material likely to be of permanent worth and, as an index, is a means of locating the technical information contained in all of the society's publications. The index combines in a more complete form than heretofore attempted the separate indexes of *Transactions* and *Mechanical Engineering*, as well as references to the reports and other technical publications of the society which have appeared during the year. The scope of the *Transactions* index has been broadened with the intention of making available material which is frequently a part of papers or discussions, but not so closely related to the subject of the paper indexed as to

be located by the usual references to that paper. This *Record and Index*, which is the second edition published by the society, also contains information about the organization and operation of the society.

### Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,  
Bureau of Railway Economics, Washington, D. C.)

#### Books and Pamphlets

*Building a Model Railroad*, by Albert Sprague Coolidge. Primarily for boys and girls who have "railroad fever" and an attic or cellar or some other large place suitable to build and extend a "model electric railway." The methods described and illustrated are those used by the Mechanics Club of Shady Hill School, Cambridge, Mass., in the club work on the "Shady Hill Railroad." Chapters include "The First Engine," "The First Track," "Switches and Signals," "Permanent Track," "Modern Rolling Stock," "Power Supply and Distribution" and "Wrecks—Their Causes and Cure." 183 p. Pub. by The Macmillan Co., New York City. \$2.

*Manual of the American Railway Engineering Association. Edition of 1929.* The sixth revised edition containing definitions of terms, designs and plans, specifications for material and workmanship and principles of practice as related to classification of railways, roadway, signs, fences and crossings, ballast, ties, rail, track, buildings, wooden bridges and trestles, masonry, grade crossings, signals and interlocking, records and accounts, rules and organization, water service and sanitation, yards and terminals, iron and steel structures, economics of railway location, wood preservation, electricity, conservation of natural resources, uniform general contract forms, economics of railway operation, economics of railway labor and shops and locomotive terminals. It is much more than a railroad engineering manual, it is an important reference work for all who seek a wide knowledge of transportation and what it entails. 1531 p. Pub. by American Railway Engineering Association, Chicago, Ill. \$6 to members, \$10 to non-members.

*The O'Fallon Case*, by Wm. M. Wherry. "The O'Fallon case presents an interesting contribution to the problem of proof and the technique in the application of principles of substantive law, rather than to the development of those principles themselves." p. 39. Reprinted from *New York University Law Quarterly Review*, Sept., 1929. p. 39-55. Publisher not given but probably available from Review offices, or author, New York City.

*Railroad Consolidation*, by William H. Williams. Address before Associated Traffic Clubs, an abstract of which appeared in the *Railway Age* for October 19. 21 p. Publisher not given, but probably available from author, New York City.

#### Periodical Articles

*Collapsing Time and Space*, by Silas Bent. "Tail spin, traffic light, SOS, microphone, tabloid—these twentieth-century words bespeak revolutionary strides in travel and communication." The author might have included "long locomotive runs," and a few other railroad contributions that are not mentioned. *World's Work*, November, 1929, p. 66-69.

*La Construction du "Congo-Océan"—Une Grande Oeuvre Française*, by Georges Bousset. Quoting the explorer Stanley to the effect that without railways the upper Congo is not worth a penny, the author presents the advantages of a railway connecting Brazzaville and Pointe Noire. For those interested in the geography of initials, "A. E. F." means, in this case, "Afrique Equatoriale Française." *Revue Politique et Parlementaire*, October 10, 1929, p. 104-127.

## Odds and Ends of Railroading

The Canadian National Railways team, from Montreal, recently won the soccer championship of Canada.

### Railroad Thrills

The new locomotor, substitute for the locomotive, functions without smoke or noise. But for us the thrill will not be entirely taken out of railroading until the conductor replaces his heavy-chained gold timepiece with a dinky wrist watch.—Chicago Daily News.

### Champion Wire-Stringer

When Edward Wilson, line foreman of the telegraph department of the Chicago, Rock Island & Pacific, retired recently, he left behind him a remarkable record. In his 23 years of service, Wilson was responsible for stringing more than 5,000 miles of telegraph wires, and for erecting about 100,000 telegraph poles.

### Grade Crossings

According to the London, Midland & Scottish magazine, there are just five crossings of railways on the level in the whole of England, and, in most of these cases, only branch lines are involved. This does not include a crossing of the main line of the Great Western by the Plymouth & Dartmouth, which is unique in its way, since the latter line employs horses as its only motive power.

### Tender Eels

While it is unusual for dead fish to be found in locomotive tenders undergoing repairs in the tank shop at the Altoona car shops, it was left for Boilermaker R. L. Lyle, of the Pennsylvania, to put the business of repairing tenders on a sporting basis. He had a lively time catching squirming eels that got in the way of his air hammer. He has on display in a bottle one of the eels that he caught. It is believed that the eels were scooped up out of the tank troughs between the rails by the engine when taking a drink on the run.

### Legislative Byplay

The present members of Congress and the state legislatures are not the first to be perplexed by the so-called railroad problem. One day, fifty years ago, after several hours of debate, the Georgia House of Representatives adopted, amid enthusiastic applause, as the Atlanta Constitution expressed it, this resolution:

"Resolved: That this railroad question stumps this House a little the worse. The more members think and talk over it, the more we can't tell. As near as we now remember, we are of the opinion that we don't know. Much has been, and much more may be, said, and neither prove correct. Upon the whole, we are inclined to think that we should, or that we should not, just as every member thinks least or otherwise. Some think through freights are through freights, and some think local freights are local freights; and the object of this resolution that each may think himself right in this matter just as he pleases.

### The Tale of a Turkey

The following letter, accompanied by a bill for \$15 for "one bronze turkey gobbler destroyed by fire," was received by the claim department of the Maine Central:

"In regard to my turkey claim which you wished me to write about, will say: As the right-of-way across our farm was being cleared of trees, brush, etc., by your company, my valuable turkey gobbler was destroyed by fire. I understand the M. C. R. R. employed Lathrop and Shea to clear the right-of-way. When they were clearing it, this gobbler, while taking his rambles over our farm, crawled into a large brush pile and some of the men working on the job set fire to the brush pile

and burned the turkey. This turkey was on our land and the M. C. R. R. made it possible to trespass on our farm and destroy my property. This is an honest bill and what I say about the bird I have absolute proof of. He weighed between 25 and 30 pounds. He was a thoroughbred bronze turkey all acclimated. By his loss I was unable to breed my flock the second time in one season.

"Now, I hope you will give this honest bill your righteous and prompt consideration."

### A Slight Interruption

Caen, as many former members of the A.E.F. will remember, is a sleepy little town in Normandy that seems to have remained unchanged since William the Conqueror left the vicinity to go over and subdue the British barbarians. As the aforesaid members of the A.E.F. may also remember, it rains at Caen some 365 days in the year and more on leap years. So it was that a small group of Normans were seated peacefully inside the little bar-room across the street from the station the other day. Nothing ever happens in Caen, but, strangely enough, on this day, something did happen. Suddenly the drinkers were rudely disturbed by the unexpected entrance of a locomotive, which came crashing through the swinging doors. It seems that, instead of sticking to the main line, the locomotive had been switched to a spur track, and the driver did not discover the mistake in time to halt the speeding engine. As soon as the dust had cleared away and the debris had stopped falling, the clientele picked themselves up and, finding that the cyclonic interruption had not done anybody any harm, rescued their unsmashed bottles. They then retired to the garden in the rear of the café, where they poured out a glass for the engineer and fireman and continued their morning bout.

### A Wild Ride

Late in June, I boarded the train that leaves Cape Town twice a week on the longest railway journey in Africa, writes Lawrence G. Green, in "The Empire Review," London. For nearly 3,000 miles this train carries you northward. Through the vines and orchards of the Paarl. Across the brown wastes of the Karroo and Bechuanaland. Past gray clouds against a crawling line of fire—the "sounding smoke" of Victoria Falls at dawn. Still northward through the bush of Northern Rhodesia. Beyond the last British outpost at Ndola.

On the fifth evening you reach the Belgian Congo frontier station of Sakania, where you must leave the clean Rhodesian train and take your seat in the grimy Chemin de Fer du Katanga.

Compartments in the Belgian train were furnished richly with curtains and tapestried walls. The wash-basins were so small that a ham-fisted man could not have washed both hands at once. Above my seat I found a notice in French and Flemish:

"In this country the mosquito is the chief enemy. Have you taken your quinine today? If not, do so now. Beware of the tsetse fly!"

Very soon I discovered a danger greater than mosquito or tsetse. All trains in the Congo are driven by fearless black maniacs. They rattle through the forest, taking steep descents and rickety bridges without slackening speed. Rocketbursts of sparks from the wood burning locomotives send the monkeys gibbering back to their trees.

When the line was first opened, the engine drivers were white men. They drank so much that natives had to be found to take their places. I am not sure, however, that a whisky-inspired European would not be safer than the sober demons who now control the trains of the Katanga. All night the nerve shattering scream of the whistle was heard. The vanity of a black driver is such that he will not pass the smallest cluster of huts without this manifestation of the high estate to which he has risen.



# NEWS of the WEEK



THE CAR FOREMEN'S ASSOCIATION OF CHICAGO will hold its next meeting at the Great Northern Hotel, Chicago, on Monday evening, November 11.

THE AMERICAN ASSOCIATION OF RAILROAD TICKET AGENTS, at its convention in New Orleans, La., October 23, elected as president for the ensuing year, W. A. Bailey, Atlanta, Ga. E. R. Hutton, New York, was re-elected secretary-treasurer.

THE CINCINNATI RAILWAY CLUB will hold its next meeting in the Chamber of Commerce, Cincinnati, on Tuesday evening, November 12, at six o'clock. This will be the annual dinner, with election of officers and a musical entertainment.

A CAR REPAIR SHOP and a storehouse at the Wyoming yards of the Pere Marquette near Grand Rapids, Mich., were destroyed by fire on October 18. Included in the loss were a number of freight cars and cabooses and a snow plow.

THE NEW ENGLAND RAILROAD CLUB will hold its next meeting on Tuesday evening, November 12, at the Copley-Plaza Hotel, Boston. There will be a paper by R. L. Bender, president of the Metals Coating Company of America, on metal coating.

THE PUBLIC UTILITY LAWS SECTION of the American Bar Association, at the annual meeting of the association at Memphis, Tenn., on October 22, elected Kenneth F. Burgess, general solicitor of the Chicago, Burlington & Quincy at Chicago, as its president.

PAT M. NEFF, of Waco, governor of Texas for two terms from 1921 to 1925, has been appointed chairman of the Railroad Commission of Texas to succeed Clarence E. Gilmore, deceased. Mr. Neff was a member of the United States Board of Mediation during the Coolidge administration.

THE AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS (J. D. Gowin, secretary, 112 West Adams street, Chicago) will hold its next meeting at the Palmer

House, Chicago, on Wednesday morning, November 20, coincident with the meeting of the National Industrial Traffic League.

## Southern Pacific Opposes Depreciation Plan

The Southern Pacific has filed with the Interstate Commerce Commission a brief urging the commission not to adopt the plan of depreciation accounting proposed in the report submitted by Commissioner Eastman. This road, which made a presentation separate from that made by the railroads generally during the hearings, declared that the plan proposed is based on assumptions contrary to law; that it would not afford the carriers the necessary cost of maintaining their property; that it would not produce accounting results lawfully usable for purposes of rate-making or recapture or any other purpose; and that, if made effective, it would deprive the carriers of their property and property rights without due process of law.

## Piedmont & Northern Case to Supreme Court

The status of the Piedmont & Northern electric railway with relation to the jurisdiction of the Interstate Commerce Commission is to be reviewed by the Supreme Court of the United States, which held on October 28 that the appeal of the electric railway company from the decision of the commission which denied its application for a certificate authorizing the construction of extensions of its line presented a question of probable jurisdiction. The district court for the western district of South Carolina refused to enjoin the commission's action and an appeal was taken to the Supreme Court.

## N. Y. Crossing Elimination Program Announced

The New York State Public Service Commission has announced an extensive program for the elimination of highway grade crossings in the year 1930 and will hold a hearing in Albany on Thursday, November 7, at which each railroad and county will be asked to state whether or not it intends in these cases to borrow money from the State. The plan in-

cludes more than two hundred crossings, mostly in the western part of the State. Some of these, however, have already been named in the program from this year. The estimated cost of the present proposals is about \$27,000,000. The largest projects included are those in Dunkirk and North Tonawanda.

## Box Car Running Boards

A hearing was held before Special Examiner Rogers of the Interstate Commerce Commission on October 28 on a complaint filed by the train service brotherhoods asking a modification of the commission's regulations which prescribe wooden running boards on box cars. The brotherhood would permit the use of "other material suitable to afford secure footing". It was indicated at the hearing that both the railroads and the brotherhoods would be satisfied with a permissive amendment to the regulations which would permit the use of running boards of composition or other material than wood.

## New York Railroad Club Annual Dinner

The New York Railroad Club will hold its annual dinner at the Commodore Hotel, New York, on December 12. The program includes a reception from 6:15 to 6:45 p. m., with the dinner at 7, followed by a speaking program with special entertainment features. The general committee in charge of the affair is as follows: F. O. Schramm, general chairman; Edward Laterman, vice-general chairman; Eliot Sumner, D. W. Pye, R. B. White, T. R. Langan, H. H. Vreeland, W. M. Wampler, J. S. Doyle, George LeBoutillier, W. G. Gove, C. R. Ellicott, Frank Hedley, L. C. Brown, J. M. Davis, R. E. Woodruff, A. N. Dugan and E. L. Smith.

## A. I. E. E. Forms Transportation Group in New York

A transportation group has been formed by the New York Section of the American Institute of Electrical Engineers. The first meeting of the group will be held in the Engineering Societies' building, 29 West Thirty-ninth street, New York, on November 4. The subject to be

discussed will be "How the Electric Railways Are Meeting the Demand for Modern Transportation." The speakers will be Guy C. Hecker, general secretary, American Electric Railway Association, and B. O. Austin, railway control engineer, Westinghouse Electric & Manufacturing Co. Subsequent meetings will cover gas-electric rail cars and locomotives and heavy electric traction.

### Frisco Stock Offered to Employees

The St. Louis-San Francisco has offered its employees 2,500 shares of preferred stock. The shares are offered at \$92.50 per share, without bankers' commission, and no more than five shares may be purchased by any one employee. Arrangements have been made for purchase by 12 monthly deductions from the payrolls, beginning with the first half of November.

In making the announcement, J. M. Kurn, president, said: "The Frisco does not own the block of stock referred to nor has it any interest therein, but the company has an abiding interest in the welfare of its employees, in their future and in the future of their dependents. The company firmly believe such an investment is safe and sound and feels it can confidently recommend the purchase of this preferred stock to those employees who would join hands as partners in the Frisco Company."

### New Records for Operating Efficiency

Class I railways in August showed an improvement as compared with August, 1928, in each of the ten selected items of freight service operating averages used by the Interstate Commerce Commission in its monthly statistical statement. The eight months ended with August also showed the best record for the corresponding period back to 1920 as to all of the items except average carload, 26.8 tons, and per cent of loaded to total car-miles, 63.2. The highest percentage of loaded car-miles was shown in 1920, when the average for eight months was 69.2. For August it was 63.5, as compared with 62.9 in August, 1928, and 63.2 for the eight months. The highest average carload was shown in 1920, when the average for eight months was 28.2 tons. For August it was 27.5, as compared with 27.2 in August, 1928, and 26.8 for the eight months period. The other items, as to which new records were shown for August and eight months, were net ton-miles per mile of road per day, gross and net trainload, gross ton-miles per train-hour, net ton-miles per car-day, car-miles per car-day, cars per train and pounds of coal per 1000 gross ton-miles.

### I. C. C. Studying Consolidation Plan

Commissioner C. R. Porter of the Interstate Commerce Commission, who in March submitted to the commission a proposed consolidation plan as a basis for its discussion and consideration, has

given out a statement that this is receiving the earnest study of every member of the commission with a sincere desire on the part of all to comply as early as possible with the law requiring the commission to promulgate a plan. "When this will be accomplished," he said, "cannot be stated. The hope has been expressed, and I think is concurred in by all the commission, that it may be done by the convening of Congress in regular session or as soon thereafter as possible. It should be remembered that the actual consolidation of the railroads must proceed on a voluntary basis, not one of compulsion. It follows, therefore, if this is to be accomplished, the proposed consolidations must be sufficiently advantageous as to afford an incentive to the carriers to go forward, but this must be subject always to the limitation that nothing be permitted by the commission which is not in the public interest."

### Equipment on Order

The railroads on October 1 had 29,481 freight cars on order, according to reports compiled by the Car Service Division of the American Railway Association. This was an increase of 21,959 cars above the number on order on October 1 last year and an increase of 14,648 cars above the same day two years ago.

Of the total, 16,014 were box cars, an increase of 12,977 compared with the same date last year; 11,968 were coal cars, an increase of 9,557. Refrigerator cars totaled 165, flat cars, 1,284, and other miscellaneous freight cars, 50.

Locomotives on order on October 1 this year numbered 354, compared with 113 on the same day in 1928, and 134 on October 1, 1927.

New freight cars placed in service in the first nine months of 1929 totaled 59,929, of which box cars totaled 28,285; coal cars, 21,925; flat cars, 3,259; refrigerator cars, 3,413 and stock cars, 2,472. Other classes installed in service during that period totaled 575. New locomotives placed in service in the first nine months of 1929 totaled 540.

### The C. N. R. in September

Gross earnings of \$196,708,304 for the nine-month period from January 1 to the end of September, 1929, as compared with \$196,317,882 for the corresponding period of 1928, an increase of \$390,482, or 0.20 per cent are shown in the monthly statement of earnings of the Canadian National. Operating expenses during the nine months of 1929 were \$162,381,114 against \$160,231,024 in the corresponding period of 1928, an increase of \$2,150,089, or 1.34 per cent. Net operating revenues for the nine-month period of 1929 were \$34,327,189 as against \$36,086,797 in 1928.

The operating ratio reached in the nine months of 1929 was 82.55 per cent, as compared with 81.62 per cent in the corresponding period of 1928.

For the month of September gross earnings of the Canadian National were \$23,383,862 as compared with \$25,383,151 in September, 1928, a decrease of \$1,999,-

289. Operating expenses during the month of September, 1929, also show a decrease as compared with the corresponding month of last year. In September, 1929, these expenses were \$18,190,523 as compared with \$18,869,490, a decrease of \$678,966 or 3.60 per cent. Net operating revenues for the month of September, 1929, were \$5,193,383 as against \$6,513,660 a decrease of \$1,320,332.

The operating ratio for the month of September, 1929, was 77.79 per cent, as against 74.34 per cent in September, 1928.

### Railroad Division, A.S.M.E., Elects Officers

Louis K. Sillcox, vice-president, New York Air Brake Company, was elected by the general committee for appointment by the president of the American Society of Mechanical Engineers to serve on the executive committee of the Railroad Division. Mr. Sillcox fills the vacancy created on the executive committee by the expiration of the term of R. S. McConnell, chief consulting engineer, Baldwin Locomotive Works, who has been chairman during the past year.

Prof. A. J. Wood, head of the mechanical engineering department, Pennsylvania State College; R. S. McConnell, and Marion B. Richardson, associate editor, *Railway Age* and Railway Mechanical Engineer, were elected to serve on the general committee. Prof. E. C. Schmidt, head of the department of railway engineering, University of Illinois, was elected to the general committee to fill the unexpired term of W. L. Bean, mechanical manager, New York, New Haven & Hartford, who resigned. The terms of the new officers begin immediately after the annual meeting of the American Society of Mechanical Engineers, December 2.

### Grand Trunk Car Ferry Mishap

A Grand Trunk car ferry, "Milwaukee", sank in Lake Michigan during a storm, on October 22, the cause being a matter of conjecture since only mute evidence of the disaster—the bodies of nine of the crew, a galley door, two mattresses and a broken chair—have been found. The ship left Milwaukee, Wis., for Grand Haven, Mich., at 2:30 p. m. on October 22, with 26 loaded freight cars and a crew of 52 persons, but was forced back into port because of the unusually heavy storm on Lake Michigan. At 8 p. m., the ferry again started on its customary six-hour run to Grand Haven and was not heard from again.

On October 24, the bodies of five members of the crew, supported by life preservers were picked up by passenger steamers between Racine and Kenosha. A water-soaked watch in the jacket of one drowned seaman was stopped at 9:30, presumably the time when its owner was submerged. On October 25, the bodies of four more of the crew were found in a lifeboat, 45 miles northwest of St. Joseph, Mich. They had died of exposure and not drowning.

According to Captain C. E. McLaren, manager of the ferries, Captain Robert



McKay, of the S. S. Milwaukee was an experienced skipper. It is believed that the cars must have pulled loose from the rails or the rails from the deck, thereby permitting the cargo to shift and leave the boat in a position to ship water.

### The C. P. R. in September

The statement of earnings and expenses of the Canadian Pacific for the month of September shows net operating revenues of \$5,010,619, as compared with \$6,298,203 in September of last year, a decrease of \$1,287,584. Gross earnings for the month are reported at \$19,551,217, a decrease of \$1,820,021, while operating expenses amounted to \$14,540,597, a decrease of \$532,437.

For the nine-month period ended with September, operating net amounted to \$28,131,789, as compared with \$31,225,289 in the corresponding period of last year, a decrease of \$3,093,500. Gross earnings for the nine-month period amounted to \$157,939,086, an increase of \$1,370,886, while operating expenses were up \$4,464,387 at \$129,807,296.

The following table shows the earnings, expenses and net for the month of September, and for the nine-month period ending with September, with comparisons:

	SEPTEMBER		Dec.
	1929	1928	
Gross	\$19,551,217	\$21,371,239	\$1,820,021
Exp.	14,540,597	15,073,035	532,437
Net	\$5,010,619	\$6,298,203	\$1,287,584
NINE MONTHS ENDING—			
	Sept. '29	Sept. '28	Dec.
Gross	\$157,939,086	\$156,568,199	*\$1,370,886
Exp.	129,807,296	125,342,909	*4,464,387
Net	\$28,131,789	\$31,225,289	\$3,093,500

\* Increase.

### P. & S. Division Will Hold Contest

The purchases and Stores division of the American Railway Association will again hold a competition for papers on railway purchasing and stores. This contest will be conducted as in previous years and is open to all employees in the purchases and stores departments below the rank of assistant purchasing agent or assistant general storekeeper. The papers may be devoted to any subject relating to the purchasing, storing and distributing of material.

They must contain at least 1,000 and not more than 3,000 words and are to be judged on the following basis: Fifty per cent for originality of the subject, ideas, conclusions and solutions of problems involved; 25 per cent for general interest and importance of the subject; 20 per cent for conciseness, clearness and grammar; and 5 per cent for general appearance and neatness. All papers must be in the hands of W. J. Farrell, secretary, Division 6, A.R.A., by March 1, 1930.

The papers will be judged by a committee consisting of A. L. Sorensen, manager of stores, Erie; J. U. King, general storekeeper, Atlantic Coast Line and F. S. Austin, purchasing agent, Boston & Albany, and the authors of the two best papers will be sent to the

1930 annual convention of the association to present them.

### The Proposed Olympic Peninsula Railroad

Witnesses at the Interstate Commerce Commission hearing at Aberdeen, Wash., on October 18 on the joint application of the Northern Pacific and the Union Pacific to construct a branch line from Aloha, Wash., to the Hoh river, 64.5 miles, testified to the necessity of such an extension for the continued development of the timber industry in the Olympic Peninsula. Clark V. Savidge, commissioner of public lands, declared that the new line would result in higher prices for state and federal timber and in speaking of the construction of such a road by the Northern Pacific and the Union Pacific instead of the Port Angeles Western, expressed the opinion that a common carrier would open the timber tract to competitive bidding.

Fred Ames, assistant district forester, also thought that the construction of a common carrier line would open the district to competitive bidding and would increase the marketability of the timber, while Hollis B. Fultz, manager of the Aberdeen chamber of commerce, stated that unless Olympic timber stands were soon opened, Gray's Harbor mills would be forced to close. The manager of a power and light company testified that his concern plans the expenditure of about \$8,500,000 for power development on the Queets and Hoh rivers, contingent upon the construction of the new line. H. E. Stevens, vice-president of the Northern Pacific, presented evidence to show that the cost of the construction of the 64.5-mile line would be \$6,421,000. He asserted that it could be built more economically by a common carrier than by a private railroad.

### Railway Car Exports Increase

The total value of railway cars exported to foreign countries during the first six months of 1929 was \$6,374,613, an increase of 55 per cent as compared with the same period in 1928, according to a report issued by the Department of Commerce. Freight car exports nearly doubled, rising from \$1,698,122 in the first half of 1928 to \$3,349,200 in the same period in 1929. The steam railway passenger cars exported rose in value from \$1,150,523 to \$1,986,298, a net increase of \$835,775 in the first half of the current year over the corresponding months of 1928. Exports of mine cars rose from \$270,589 in the first half of 1928 to \$324,820 during the same part of the current year. Electric railway passenger cars, exports of which were valued at \$887,436 in the first half of 1928, dropped to \$609,507 during the same period in the present year.

Brazil was the largest single foreign customer of the railway car manufacturers, with purchases totalling \$2,579,124 during the first six months of 1929. This included 575 freight cars, valued at \$856,193 and 23 steam railway passenger cars,

valued at \$1,327,213. The Argentine Republic furnished the second largest market for American equipment, placing orders to the amount of \$718,587, while other foreign countries ordering more than \$100,000 worth of cars during the first half of the current year were, in order, Canada, Chile, Mexico, Colombia, Bolivia, Guatemala, Costa Rica and China.

### Roads Oppose Compulsory Construction in Oregon

Oral arguments were heard by the Interstate Commerce Commission at Washington on October 30 on the report proposed by Commissioner McManamy recommending that the commission require the Oregon-Washington Railroad & Navigation Company to build a rail line extension across the "high desert" of central Oregon, from Crane to a connection with the Southern Pacific at or near Crescent Lake, about 185 miles. The cost of the construction was estimated by the O. W. R. & N. Company at over \$11,000,000. The report was issued on a complaint filed by the Public Service Commission of Oregon which asked that one or more of the carriers serving the state be required to build the line.

Representatives of the Oregon commission and of the communities involved strongly supported the proposed report, declaring that the cross-state line is badly needed to serve a territory of 10,000,000 acres which they asserted is "bottled up" for lack of rail facilities. The defendant railroads had taken the position that there is no public necessity for the line and that if the law can be construed as conferring on the commission power to order the construction it is unconstitutional. Ben Day, appearing on behalf of the Southern Pacific, opposed the proposed order on the ground that the plan requires the diversion of traffic from 1,400 miles of its line in Oregon to make it pay and that the local territory is absolutely unproductive. He said the Southern Pacific has recently spent about \$10,000,000 to serve the very traffic which it is now proposed shall be diverted to the new line.

A. C. Spencer, general solicitor of the Oregon-Washington, also declared that the territory proposed to be traversed by the line has little capability of producing traffic and that its development has been hampered more by lack of water than by lack of transportation. He also expressed great doubt as to how the traffic could be diverted to the line from the Southern Pacific and said that the estimates made on behalf of the complainant of the possible traffic had been largely based on through traffic originated on the Southern Pacific in western Oregon.

### Seventh Year of Safety Campaign

L. G. Bentley, chairman of the Committee of Direction of the Safety Section, A. R. A., in a circular to members, calls attention to the fact that we are soon to enter the seventh and last year of the campaign which was entered upon

(Continued on page 1072)

## Operating Statistics of Large Steam Railways—Selected Items for August, 1929, Compa

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles		Car-miles		Ton-miles (thousands)		Average number of locomotives on line			
			Principal and helper	Light	Loaded (thousands)	Per cent loaded	Gross. Excluding locomotives and tenders	Net. Revenue and non-revenue	Serv-ice-able	Un-serv-ice-able	Per cent unserv-ice-able	Stored
New England Region:												
Boston & Albany.....1929	407	203,532	215,785	21,230	5,292	69.0	269,710	101,052	103	17	14.4	37
1928	407	186,509	198,872	21,801	4,997	69.1	252,905	95,946	99	20	17.0	31
Boston & Maine.....1929	2,059	398,599	461,872	55,761	13,418	71.4	670,869	263,667	243	42	14.7	43
1928	2,074	400,940	478,684	67,918	13,076	71.9	649,309	261,663	276	42	13.1	51
N. Y., New H. & Hart...1929	2,103	512,703	585,586	38,971	17,131	68.1	906,781	369,433	274	59	17.6	8
1928	2,119	549,296	612,065	35,770	16,533	67.5	878,241	356,912	317	52	14.1	44
Great Lakes Region:												
Delaware & Hudson.....1929	875	329,157	437,041	46,863	10,700	65.8	639,957	203,322	242	32	11.6	88
1928	875	327,410	442,936	52,786	10,332	64.7	637,678	303,585	244	41	14.4	96
Del., Lack. & Western....1929	998	489,538	536,126	59,978	18,283	71.6	972,923	410,535	243	50	17.0	29
1928	998	527,228	587,602	67,843	17,828	70.1	971,498	413,947	240	59	19.7	33
Erie (inc. Chi. & Erie)....1929	2,317	907,394	967,490	69,126	41,463	65.3	2,417,434	982,810	391	99	20.2	31
1928	2,317	886,316	956,157	76,848	39,567	65.9	2,302,425	957,519	415	111	21.1	49
Lehigh Valley .....1929	1,343	549,531	602,963	73,083	17,934	66.5	1,067,968	473,310	273	83	23.3	53
1928	1,346	561,500	613,164	64,958	18,141	66.4	1,064,974	471,583	335	93	21.6	69
Michigan Central .....1929	1,822	549,120	550,239	15,684	19,816	61.3	1,121,935	401,615	193	37	16.0	28
1928	1,822	587,802	571,692	16,844	20,270	62.2	1,128,062	402,670	197	63	24.2	24
New York Central.....1929	6,467	2,031,006	2,243,290	159,265	82,739	63.3	4,994,616	2,152,242	981	286	22.6	209
1928	6,459	2,008,104	2,241,593	147,306	78,477	61.8	4,779,208	2,017,245	1,003	357	26.3	251
New York, Chi. & St. L....1929	1,665	679,974	689,746	8,255	23,106	65.1	1,296,166	501,943	201	64	24.2	19
1928	1,665	591,894	600,021	6,836	20,512	65.6	1,127,422	436,935	227	56	19.9	66
Pere Marquette .....1929	2,178	514,128	517,572	5,672	13,459	63.1	797,519	341,290	184	28	13.1	9
1928	2,181	472,816	477,612	5,692	12,719	63.9	759,862	334,724	177	37	17.1	9
Pitts. & Lake Erie.....1929	231	145,119	146,996	2,299	5,391	65.8	413,842	242,389	50	11	18.1	7
1928	231	115,498	117,695	1,151	4,525	65.7	357,161	208,401	54	16	22.8	15
Wabash .....1929	2,497	911,130	954,326	20,246	28,609	64.4	1,652,025	632,197	293	63	17.8	18
1928	2,497	808,247	842,469	12,983	25,354	65.1	1,434,928	559,993	297	71	19.3	39
Central Eastern Region:												
Baltimore & Ohio.....1929	5,536	2,061,101	2,442,954	198,523	65,338	62.9	4,327,257	2,042,768	1,011	162	13.8	99
1928	5,534	1,997,842	2,365,143	189,804	61,860	62.5	4,144,152	1,992,326	1,025	230	18.3	152
Central of New Jersey....1929	691	277,376	298,061	48,662	8,190	59.3	535,820	243,881	180	26	12.5	33
1928	691	281,096	304,118	44,198	8,336	58.5	547,955	255,908	179	32	15.1	26
Chicago & Eastern Ill....1929	946	257,985	258,847	3,479	7,530	66.7	444,086	198,145	99	70	41.6	27
1928	945	251,487	252,191	3,668	7,063	66.5	412,127	183,123	112	59	34.5	42
Clev., Cin., Chi. & St. L.1929	2,371	790,741	816,500	17,585	26,330	62.5	1,670,030	761,578	300	116	27.9	17
1928	2,370	764,578	788,222	18,600	24,916	60.8	1,605,248	723,553	329	107	24.6	58
Elgin, Joliet & Eastern...1929	453	147,247	155,658	6,984	4,384	66.3	325,267	171,266	76	12	13.3	...
1928	461	135,178	140,465	5,380	3,935	65.2	284,362	138,849	80	10	11.1	5
Long Island .....1929	400	52,273	55,489	15,224	677	58.8	42,205	16,662	47	5	10.4	4
1928	396	49,318	50,005	12,953	592	56.8	39,126	15,412	37	9	14.1	4
Pennsylvania System.....1929	10,738	4,168,787	4,782,456	458,135	153,116	64.6	10,237,419	4,885,116	2,516	338	11.8	549
1928	10,742	4,046,929	4,594,597	404,980	141,953	64.4	9,248,011	4,283,479	2,751	343	11.1	750
Reading .....1929	1,451	611,677	668,922	50,384	17,976	62.0	1,212,099	596,011	330	62	15.8	56
1928	1,416	632,980	701,757	52,361	17,496	61.7	1,200,891	598,867	329	75	18.5	65
Pocahontas Region:												
Chesapeake & Ohio.....1929	2,734	1,150,627	1,233,871	48,852	42,436	57.0	3,419,088	1,853,894	526	91	14.8	58
1928	2,727	1,115,800	1,192,753	45,337	39,142	57.3	3,152,374	1,710,830	542	93	14.7	77
Norfolk & Western.....1929	2,230	907,549	1,014,051	41,461	36,246	59.1	3,063,043	1,659,465	466	52	10.0	100
1928	2,231	837,875	975,357	36,371	32,101	59.0	2,650,916	1,421,097	517	52	9.2	153
Southern Region:												
Atlantic Coast Line.....1929	5,153	561,746	563,030	7,383	14,791	62.8	807,052	307,033	406	57	12.2	106
1928	5,127	566,186	570,110	7,486	14,360	62.8	774,267	288,756	437	48	10.0	95
Central of Georgia.....1929	1,900	269,220	271,014	4,665	7,094	72.6	361,401	148,916	133	17	11.4	13
1928	1,898	283,080	286,246	3,801	6,946	70.2	366,315	151,140	136	23	14.4	11
Ill. Cent. (inc. Y. & M. V.)1929	6,695	1,940,148	1,954,644	29,671	56,011	64.5	3,553,107	1,507,264	732	113	13.4	22
1928	6,738	1,864,530	1,883,584	29,882	52,474	63.1	3,347,076	1,398,480	763	107	12.3	66
Louisville & Nashville....1929	5,247	1,630,185	1,731,852	54,104	36,915	60.1	2,521,841	1,210,987	588	117	16.6	47
1928	5,242	1,730,349	1,802,094	59,916	37,483	58.2	2,610,708	1,250,008	621	112	15.2	56
Seaboard Air Line.....1929	4,475	489,583	509,214	8,107	12,520	65.3	688,927	273,759	270	47	14.8	19
1928	4,485	512,094	529,247	7,762	12,480	63.6	700,817	270,837	268	61	18.5	22
Southern .....1929	6,679	1,439,220	1,471,951	29,106	37,394	66.7	2,036,968	829,417	833	126	13.1	192
1928	6,718	1,528,257	1,595,709	31,151	37,610	64.5	2,103,144	845,379	860	108	11.2	140
Northwestern Region:												
Chi. & North Western....1929	8,467	1,656,344	1,743,741	30,902	43,770	61.7	2,743,777	1,073,617	735	83	10.2	49
1928	8,643	1,562,426	1,643,709	29,563	41,060	61.6	2,504,533	989,208	754	136	15.3	76
Chi., Milw., St. P. & Pac.1929	11,244	1,978,342	2,113,805	125,949	59,464	61.9	3,693,263	1,598,377	782	135	14.7	107
1928	11,248	1,874,766	2,016,389	117,273	55,376	59.7	3,436,580	1,416,474	801	124	13.4	132
Chi., St. P., Minn. & Om.1929	1,724	380,417	424,182	17,557	8,380	71.1	478,387	218,117	149	23	13.4	14
1928	1,724	357,143	392,532	15,023	7,858	72.5	433,856	198,891	156	26	14.0	15
Great Northern .....1929	8,344	998,562	1,030,265	68,936	38,904	61.8	2,545,820	1,237,337	444	161	26.6	30
1928	8,305	955,823	986,795	74,956	35,575	61.5	2,250,143	1,052,469	486	137	22.0	57
Minn., St. P. & S. St. M.1929	4,357	507,800	527,112	10,928	15,158	67.1	848,861	383,214	187	49	20.8	10
1928	4,676	915,644	972,881	53,961	30,268	65.6	800,509	348,576	211	34	14.0	17
Northern Pacific .....1929	4,358	527,020	545,075	5,219	14,697	66.3	1,764,448	748,071	430	119	21.7	40
1928	4,414	944,058	1,006,088	56,943	30,973	63.2	1,826,980	743,687	426	135	24.1	21
Oreg.-Wash. R. R. & Nav.1929	2,246	231,924	244,907	18,978	7,153	68.5	421,590	188,323	124	10	7.4	16
1928	2,246	226,049	237,533	16,495	6,910	69.3	403,688	181,096	127	14	10.0	14
Central Western Region:												
Atch., Top. & S. Fe (incl.1929	11,233	1,966,991	2,139,039	109,155	65,387	63.1	3,973,624	1,434,000	779	156	16.7	111
1928	11,193	1,849,883	1,994,595	99,691	61,016	63.1	3,700,586	1,351,815	841	148	15.0	159
P. & S. F.).....1929	1,000	32										



## red with August, 1928, for Roads with Annual Operating Revenues Above \$25,000,000

Region, road and year	Average number of freight cars on line			Per cent un-serv-ice-able	Gross ton-miles per hour, ex-cluding loco-motives and tenders	Gross ton-miles per train-mile ex-cluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive miles per loco-motive-day
	Home	Foreign	Total										
New England Region:													
Boston & Albany.....1929	3,062	5,228	8,290	10.0	18,765	1,325	496	19.1	393	29.8	8,007	162	63.3
1928	2,409	5,263	7,672	3.7	18,573	1,356	514	19.2	403	30.4	7,604	159	59.8
Boston & Maine.....1929	9,951	11,991	21,942	6.5	20,311	1,683	661	19.7	388	27.6	4,131	106	58.7
1928	11,684	11,117	22,801	6.2	18,731	1,619	653	20.0	370	25.7	4,070	108	55.5
N. Y., New H. & Hart..1929	14,711	15,910	30,621	9.3	22,210	1,769	721	21.6	389	26.5	5,667	102	60.5
1928	17,271	16,339	33,610	8.7	20,359	1,599	650	21.6	343	23.5	5,433	104	56.6
Great Lakes Region:													
Delaware & Hudson....1929	9,720	5,719	15,439	4.3	24,945	1,944	922	28.3	634	34.0	11,183	127	57.0
1928	8,504	5,393	13,897	4.5	24,334	1,948	927	29.4	705	37.1	11,192	129	56.1
Del., Lack. & Western...1929	15,073	8,361	23,434	5.1	25,138	1,987	839	22.5	565	35.1	13,268	125	65.6
1928	16,593	7,578	24,171	5.2	22,882	1,843	785	23.2	552	34.0	13,381	119	70.7
Erie (inc. Chi. & Erie)..1929	28,371	21,616	49,987	5.2	34,716	2,664	1,083	23.7	634	41.0	13,684	102	68.2
1928	29,568	19,626	49,194	3.5	31,977	2,598	1,080	24.2	628	39.4	13,332	108	63.3
Lahigh Valley .....1929	19,774	10,416	30,190	7.0	27,204	1,943	861	26.4	506	28.8	11,365	135	61.3
1928	22,812	10,208	33,020	12.5	25,748	1,897	840	26.0	461	26.7	11,303	134	51.1
Michigan Central.....1929	14,898	17,265	32,163	5.4	32,640	2,043	731	20.3	403	32.4	7,110	99	79.5
1928	17,402	16,457	33,859	6.6	30,843	1,919	685	19.9	384	31.0	7,129	99	72.9
New York Central.....1929	59,718	83,202	142,920	4.3	32,124	2,459	1,060	26.0	486	29.5	10,736	95	61.2
1928	63,898	69,548	133,446	7.0	30,925	2,380	1,005	25.7	488	30.7	10,075	98	56.6
New York, Chi. & St. L..1929	12,198	12,120	24,318	7.0	26,724	1,906	738	21.7	666	47.1	9,726	96	84.9
1928	13,504	9,940	23,444	6.1	26,100	1,905	738	21.3	601	43.0	8,467	99	69.1
Pere Marquette .....1929	9,092	10,449	19,541	3.9	20,557	1,551	664	25.4	563	35.2	5,055	94	79.6
1928	9,451	10,070	19,521	3.9	20,158	1,607	708	26.3	553	32.9	4,952	92	73.2
Pitts. & Lake Erie.....1929	10,978	10,172	21,150	5.4	32,793	2,852	1,670	45.0	370	12.5	33,809	99	78.4
1928	14,090	8,353	22,443	6.4	33,455	3,092	1,804	46.1	300	9.9	29,068	93	54.5
Wabash .....1929	13,886	15,871	29,757	2.5	28,682	1,813	694	22.1	685	48.2	8,169	105	88.2
1928	14,941	12,762	27,703	2.9	28,375	1,775	693	22.1	652	45.3	7,234	109	74.9
Central Eastern Region:													
Baltimore & Ohio.....1929	67,473	34,561	102,034	5.9	23,351	2,099	991	31.3	646	32.9	11,902	130	72.6
1928	73,734	30,726	104,460	6.0	23,404	2,074	997	32.3	615	30.6	11,613	133	65.7
Central of New Jersey...1929	16,606	10,955	27,561	6.3	22,958	1,932	879	29.8	285	16.2	11,393	138	54.4
1928	18,155	10,547	28,702	5.7	21,352	1,949	910	30.7	288	16.0	11,947	134	53.3
Chicago & Eastern Ill...1929	12,518	5,238	17,756	41.5	24,894	1,721	768	26.3	360	20.5	6,755	110	50.1
1928	13,323	4,405	17,728	33.0	23,123	1,639	728	25.9	333	19.3	6,250	122	48.3
Clev., Cin., Chi. & St. L..1929	19,382	21,397	40,779	5.2	29,651	2,112	963	28.9	602	33.3	10,361	102	64.6
1928	21,236	20,552	41,788	4.7	27,602	2,106	946	29.0	559	31.7	9,847	106	59.6
Elgin, Joliet & Eastern..1929	8,260	8,306	16,566	9.1	16,170	2,209	1,163	39.1	333	12.9	12,190	115	59.6
1928	9,141	7,393	16,534	5.5	16,197	2,104	1,027	35.3	271	11.8	9,716	116	52.3
Long Island .....1929	930	4,169	5,099	1.3	5,886	807	319	24.6	105	7.3	1,343	350	43.9
1928	1,739	4,027	5,766	1.5	5,129	793	313	26.0	86	5.8	1,256	302	30.8
Pennsylvania System....1929	203,143	90,770	293,913	5.3	28,825	2,456	1,172	31.9	536	26.0	14,675	113	59.2
1928	215,360	83,739	299,099	6.2	26,032	2,286	1,059	30.2	462	23.8	12,864	117	52.1
Reading .....1929	27,100	14,271	41,371	5.8	21,868	1,982	974	33.2	465	22.6	13,249	132	59.3
1928	29,441	12,557	41,998	5.4	20,846	1,897	946	34.2	460	21.8	13,640	138	60.2
Pocahontas Region:													
Chesapeake & Ohio.....1929	28,790	13,088	41,878	2.9	36,365	2,971	1,611	43.7	1,428	57.3	21,876	78	67.1
1928	29,847	10,034	39,881	3.5	34,288	2,825	1,533	43.7	1,384	55.2	20,238	81	62.8
Norfolk & Western.....1929	27,451	9,994	37,445	1.0	45,290	3,375	1,829	45.8	1,430	52.8	24,004	108	65.7
1928	29,181	8,669	37,850	1.0	42,374	3,164	1,696	44.3	1,211	46.3	20,544	117	57.3
Southern Region:													
Atlantic Coast Line.....1929	20,189	5,631	25,820	6.7	20,530	1,437	547	20.8	384	29.4	1,922	100	39.8
1928	21,191	6,218	27,409	6.1	18,406	1,368	510	20.1	340	26.9	1,817	109	38.4
Central of Georgia.....1929	4,041	4,158	8,199	6.4	19,013	1,342	553	21.0	586	38.4	2,528	127	59.3
1928	5,284	5,342	10,626	3.3	17,972	1,294	534	21.8	459	30.0	2,569	131	58.8
Ill. Cent. (inc. Y. & M. V.)1929	38,316	22,673	60,989	4.4	25,023	1,831	777	26.9	797	46.0	7,263	117	75.8
1928	41,967	20,934	62,901	6.7	23,631	1,795	750	26.7	717	42.6	6,695	114	71.0
Louisville & Nashville...1929	42,835	15,306	58,141	10.7	20,621	1,547	743	32.8	672	34.1	7,445	124	81.8
1928	44,084	17,100	61,184	9.6	20,162	1,509	722	33.3	659	34.0	7,692	133	81.9
Seaboard Air Line.....1929	14,684	5,732	20,416	7.2	18,884	1,407	559	21.9	433	30.3	1,973	124	52.6
1928	15,342	6,331	21,673	8.1	17,411	1,369	529	21.7	403	29.2	1,948	132	52.6
Southern .....1929	47,567	16,966	64,533	10.8	20,288	1,415	576	22.2	415	28.0	4,006	143	50.5
1928	48,169	17,422	65,591	9.1	18,095	1,376	553	22.5	416	28.7	4,059	145	53.0
Northwestern Region:													
Chi. & North Western...1929	45,933	33,302	79,235	6.5	21,376	1,657	648	24.5	437	28.9	4,090	112	70.0
1928	46,591	31,582	78,173	6.4	20,841	1,603	633	24.0	408	27.5	3,770	113	60.6
Chi., Mil., St. P. & Pac.1929	49,037	32,538	81,575	2.7	23,776	1,867	808	26.9	632	38.0	4,586	113	78.8
1928	50,276	27,559	77,835	3.1	23,468	1,833	756	25.6	587	38.4	4,062	115	74.4
Chi., St. P., Minn. & Om..1929	2,195	10,561	12,756	6.3	16,527	1,258	573	26.0	552	29.8	4,082	108	82.8
1928	2,670	9,516	12,186	7.2	15,510	1,215	557	25.3	526	28.7	3,722	111	72.3
Great Northern .....1929	40,192	18,060	58,252	4.8	31,072	2,549	1,239	31.8	685	34.9	4,784	106	58.6
1928	40,632	14,994	55,626	4.3	28,013	2,534	1,101	29.6	610	33.5	4,088	114	54.9
Minn., St. P. & S. St. M..1929	19,639	7,269	26,908	3.3	20,092	1,672	755	25.3	465	27.4	2,837	90	73.5
1928	20,715	8,152	28,867	4.1	17,950	1,519	661	23.7	399	25.4	2,580	98	72.5
Northern Pacific.....1929	36,374	10,060	46,434	7.6	25,537	1,927	817	24.7	520	32.0	3,726	130	60.3
1928	37,254												

## News of the Week

(Continued from page 1069)

in 1923 to reduce casualties to employees. The aim at that time was to make a reduction of at least 35 per cent by the end of 1930; and Mr. Bentley has the satisfaction of showing that at the end of 1928 there had been a reduction of 47 per cent in the casualty rate, taking the roads as a whole; and that less than half a dozen of the larger railways—including every one which reports more than fifty million man hours a year—had failed to show the desired progress.

The plain lesson of the experiences of these six years of effort is, according to Mr. Bentley, that each railroad should (1) ESTABLISH RULES OR INSTRUCTIONS COVERING PRACTICES WHICH RESULT IN PERSONAL INJURIES AND WHICH MAY BE EASILY DEFINED AND REGULATED. (2) CHARGE SUPERVISION WITH THE SAME RESPONSIBILITY FOR THEIR ENFORCEMENT AS NOW APPLIES TO OPERATING RULES. The committee feels that employees, as a class, now realize that safety rules are primarily for their own protection, and feels confident that the carrying out of the spirit of these two rules will effect still further reduction in death, suffering and expense.

H. A. Rowe, chairman of the Committee on the Prevention of Highway Crossing Accidents, speaking for the Safety section, calls attention to the fact that wayfarers at grade crossings, as well as employees of the railroads, have benefited by the constant and strenuous efforts of the Safety section during the past few years. Fatalities at highway crossings in 1928 numbered one to each 9,538 motor vehicles registered; a ratio which indicates an improvement of 43 per cent, per number of cars registered, as compared with 1923.

In the four summer months of this year, during which the railroads have been active in publicity work in this field, the total number of crossing fatalities reported was 869, equal to one for each 17,367 cars. Based on the proportion of fatalities to cars in use, this is an improvement over the summer of 1928 of 64 per cent.

### Los Angeles Station Case Argued in Supreme Court

Questions as to the jurisdiction of the Interstate Commerce Commission to require by order the Atchison, Topeka & Santa Fe, the Los Angeles & Salt Lake and the Southern Pacific to construct a new union passenger terminal at Los Angeles, Cal., were argued before the Supreme Court of the United States on October 28 and 29, on an appeal taken by the commission from the decision of the court of appeals of the District of Columbia. The lower court held that a writ of mandamus should issue directing the commission to consider the evidence bearing on the question of its jurisdiction and thereafter to make such order as in its opinion the facts and merits justify.

The commission had held that Congress had not authorized it to require the building of a new union terminal in lieu of existing terminals, as the city of Los Angeles had asked it to do, but it issued a finding that the establishment of a new station would be in the public interest.

The commission, in its brief, said that the question involved is whether it has the direct and affirmative authority to require railroads serving a city to construct a new union station and use it in lieu of their existing terminals. Max Thelen and other counsel for the city said the question as thus stated was too broad and that the real question is whether the commission has the jurisdiction to require three specified railroads to construct, maintain and operate a union station in a specified area near the Plaza in Los Angeles, "when the conceded facts show that the carriers not only already own substantially all the trackage which would be jointly used but also have recently purchased and at this time own more than two-thirds in area of the land on which the union passenger station and appurtenances would be constructed."

D. W. Knowlton, chief counsel for the Interstate Commerce Commission, pointed out that the commission had issued a certificate of public convenience and necessity and had held that the expense involved would not impair the carriers' ability to perform their duties to the public; but he said that nowhere in the interstate commerce act is there any provision giving the commission power to compel several carriers to construct and use a new station, abandoning their old terminals. Mr. Thelen contended that a union station comes within the meaning of the word "facilities" as used by the act and the commission has power to require roads to furnish adequate facilities.

### Program for Railroad Men at Annual A.S.M.E. Meeting

Following the same procedure as it did for the Annual Meeting of the American Society of Mechanical Engineers, in 1928, the Meetings and Program Committee, Railroad Division, has arranged a consolidated program of papers which it considers to be of special interest to railway mechanical department officers. This program of papers will be presented during the annual meeting of the American Society of Mechanical Engineers, December 2 to 6, inclusive. In the arranging of this program advantage was taken of the papers and reports of other professional divisions presented at this meeting together with the Railroad Division's two-sessions program of four papers. The Railroad Division holds its two sessions on Thursday, December 5, during which the following papers will be presented: High-Pressure Locomotives, by A. F. Stuebing, chief engineer, Bradford Corp.; Locomotive Auxiliary Power Mediums, by George W. Armstrong, Bethlehem Steel Co.; Heat Transfer in the Locomotive Superheater, by Lawford H. Fry, metallurgical engineer, Standard Steel Works Company, and Metallurgy in the

Railroad Field, by Charles McKnight, metallurgist, development and research department, International Nickel Company. In addition to these two sessions, the Railroad Division is holding a joint session with the Oil & Gas Power Division on Friday, December 6, at 2:00 p.m., during which a paper on the Design and Application of Rail-Motor Cars, by C. O. Guernsey, J. G. Brill Company, will be presented. A Symposium on Rail Motor Car Maintenance, lead by C. E. Barba, mechanical engineer, Boston & Maine, will conclude the program for that session.

Following is the consolidated program:

#### Monday, December 2

Present Status of the Mechanical-Spring Art, by J. K. Wood.  
Elastic and Inelastic Behavior in Spring Materials, by M. F. Sayre.  
Fifth Progress Report of Special Research Committee on Mechanical Springs.  
Factor of Safety and Working Stress, by C. Richard Soderberg.  
Quantity Control and Production Gages, by Earle Buckingham.

#### Tuesday, December 3

Progress Report of Fuels Division.  
The Application of Aerial Tramways to Long and Short Hauls, by M. P. Morrison.  
Progress Report of Materials Handling Division.  
Economic Aspects of Gasoline-Operated Commercial Vehicles, by R. E. Plimpton.  
The Economics of the Electric Truck in Delivery Service, by Charles R. Skinner, Jr.  
Turning With Shallow Cuts at High Speeds, by H. J. French and T. G. Digges.  
Power Required to Drill Cast Iron and Steel, by O. W. Boston and C. J. Oxford.  
A Test Code for High-Speed Steel for Turning Tools, by L. H. Kenney.  
Report of Sub-Committee D. on Properties of Materials of the Special Research Committee on Cutting of Metals.  
Present Practice in the Use of Cutting Fluids, by S. A. McKee.  
Progress report No. 2 of Sub-Committee on Cutting Fluids.

#### Wednesday, December 4

The Pioneer 1800-Lb. Pressure Power Plant in America, by W. E. S. Dyer.  
Management of Service Department: Budgeting and Wage Incentives Applied to a Large Organization, by William B. Ferguson and Tom H. Blair.  
Performance of Oil-Ring Bearings, by George B. Karelitz.  
The Service Characteristics of Diesel-Engine Lubricating Oil, by A. E. Flowers and M. A. Dietrich.  
Report on the Study of Non-College Technical Education, by W. E. Wickenden.  
Suggestions for Encouraging Education and Training for Industry, by H. S. Falk.  
Test Code for Complete Steam-Electric Power Plants.

#### Thursday, December 5

The Effect of Large Boilers Operated at High Capacities on the Operating Characteristics and Investment Costs of Boiler Plants, by F. S. Clark.  
Performance of Modern Steam-Generating Units, by C. F. Hirshfeld and G. U. Moran.  
High-Pressure Locomotives, by A. F. Stuebing.  
Locomotive Auxiliary Power Mediums, by George W. Armstrong.  
Progress Report of Railroad Division.  
Progress Report of Oil and Gas Power Division.  
Progress Report of Special Research Committee on Diesel Fuel Oil Specifications.  
Heat Transfer in the Locomotive Superheater, by Lawford H. Fry.  
Metallurgy in the Railroad Field, by Charles McKnight.  
Working Stresses for Steel at High Temperatures, by D. S. Jacobus.

#### Friday, December 6

Recent Instances of Embrittlement in Steam Boilers, by Frederick G. Straub.  
The Design and Application of Rail-Motor Cars, by C. O. Guernsey.  
Symposium on Rail-Motor Car Maintenance, led by C. E. Barba.  
From the Master Cabinetmakers to Woodworking Machinery, by J. D. and Margaret S. Wallace.  
Modern Method of Manufacturing Classical Furniture, by Harry Kimp.  
Progress Report of Wood Industries Division.



## Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

**AIR BRAKE ASSOCIATION.**—T. L. Burton, Room 5605, Grand Central Terminal Building, New York City. Next meeting, Minneapolis, Minn. Exhibit by Air Brake Appliance Association.

**AIR BRAKE APPLIANCE ASSOCIATION.**—Fred W. Venton, Crane Company, 836 So. Michigan Blvd., Chicago. Meets with Air Brake Association.

**AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.**—J. D. Gowin, 112 W. Adams St., Chicago. Next meeting Nov. 20, Palmer house, Chicago, coincident with National Industrial Traffic League.

**AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.**—E. L. Duncan, 332 S. Michigan Ave., Chicago. Next meeting, April, 1930, Daytona Beach, Fla.

**AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.**—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

**AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.**—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, June 16-19, 1930, Minneapolis, Minn.

**AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.**—F. R. Borger, Supt. Dining Car Service, Monon Route, Chicago.

**AMERICAN ELECTRIC RAILWAY ASSOCIATION.**—Guy C. Hecker, 292 Madison Ave., New York.

**AMERICAN RAILROAD MASTER TINNERS', COPPER-SMITHS' AND PIPE FITTERS' ASSOCIATION.**—C. Borchert, 202 North Hamlin Ave., Chicago.

**AMERICAN RAILWAY ASSOCIATION.**—H. J. Forster, 30 Vesey St., New York, N. Y.

**Division I.—Operating.**—J. C. Caviston, 30 Vesey St., New York, N. Y.

**Freight Station Section.**—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago.

**Medical and Surgical Section.**—J. C. Caviston, 30 Vesey St., New York.

**Protective Section.**—J. C. Caviston, 30 Vesey St., New York.

**Safety Section.**—J. C. Caviston, 30 Vesey St., New York.

**Telegraph and Telephone Section.**—W. A. Fairbanks, 30 Vesey St., New York. Next convention, Sept. 16-19, 1930, Royal York Hotel, Toronto, Ont.

**Division II.—Transportation.**—G. W. Covert, 431 South Dearborn St., Chicago.

**Division III.—Traffic.**—J. Gottschalk, 143 Liberty St., New York.

**Division IV.—Engineering.**—E. H. Fritch, 431 South Dearborn St., Chicago. Next meeting March 11-13, 1930, Palmer House, Chicago. Exhibit by National Railway Appliances Association.

**Construction and Maintenance Section.**—E. H. Fritch. Next meeting, March 11-13, 1930, Palmer House, Chicago.

**Electrical Section.**—E. H. Fritch.

**Signal Section.**—H. S. Balliet, 30 Vesey St., New York. Next meeting, March 10-11, 1930, Stevens Hotel, Chicago.

**Division V.—Mechanical.**—V. R. Hawthorne, 431 South Dearborn St., Chicago. Annual convention, June 18-25, 1930, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.

**Equipment Painting Section.**—V. R. Hawthorne, 431 South Dearborn St., Chicago. Next convention, 1930, Chicago. Exhibit by Supply Men's Association.

**Division VI.—Purchases and Stores.**—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual convention, June, 1930, Atlantic City.

**Division VII.—Freight Claims.**—Lewis Pilcher, 431 South Dearborn St., Chicago. Next meeting, June 10-13, 1930, Olympic Hotel, Seattle, Wash.

**Division VIII.—Motor Transport.**—George M. Campbell, American Railway Association, 30 Vesey St., New York, N. Y. Next meeting, November 12-15, Royal York Hotel, Toronto, Canada.

**Car Service Division.**—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

**AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.**—C. A. Lichty, C. & N. W. Ry., 315 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association.

**AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.**—E. L. Taylor, Asst. to Exec., Vice-Pres., N. Y. N. H. & H., New Haven, Conn. Semi-annual meeting, December 5-6, 1929, Hotel Sherman, Chicago. Annual meeting, June 18-20, Hotel Duluth, Duluth, Minn.

**AMERICAN RAILWAY ENGINEERING ASSOCIATION.**—Works in co-operation with the American Railway Association, Division IV.—E. H. Fritch, 431 South Dearborn St., Chicago. Annual meeting, March 11-13, 1930, Palmer House, Chicago. Exhibit by National Railway Appliances Association.

**AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.**—Miss Page Nelson Price, Norfolk & Western Magazine, Roanoke, Va.

**AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.—Acting Secretary: H. W. Leighton, Harry W. Leighton Co., 565 W. Washington St., Chicago.

**AMERICAN SHORT LINE RAILROAD ASSOCIATION.**—T. F. Whittlesey, Union Trust Bldg., Washington, D. C.

**AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, 30 Church St., New York.

**AMERICAN WOOD PRESERVERS' ASSOCIATION.**—H. L. Dawson, 228 N. LaSalle St., Chicago. Annual convention, January 28-30, 1930, Seattle, Wash.

**ASSOCIATION OF RAILWAY CLAIM AGENTS.**—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual convention, May, 1930, Richmond, Va.

**ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.**—Jos. A. Andreucetti, C. & N. W. Ry., Room 413, C. & N. W. Station, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

**ASSOCIATION OF RAILWAY EXECUTIVES.**—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

**ASSOCIATION OF RAILWAY SUPPLY MEN.**—J. W. Fogg, MacLean-Fogg Lock Nut Co., 2649 N. Kildar Ave., Chicago. Meets with International Railway General Foremen's Association.

**BOILER MAKER'S SUPPLY MEN'S ASSOCIATION.**—George R. Boyce, A. M. Castle & Co., Chicago. Meets with Master Boiler Makers' Association.

**BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.**—I. B. Tanner, Joe E. Nelson & Sons, 3240 So. Michigan Ave., Chicago. Meets with American Railway Bridge and Building Association.

**CANADIAN RAILWAY CLUB.**—C. R. Crook, 129 Charon St., Montreal, Que.

**CAR FOREMEN'S ASSOCIATION OF CHICAGO.**—G. K. Oliver, Chicago & Alton, Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

**CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.**—J. W. Krause, 514 East Eighth St., Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth St., Los Angeles.

**CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.**—F. G. Wiegmann, 720 N. 23rd St., East St. Louis, Ill. Meetings first Tuesday of each month, except July and August, Broadview Hotel, East St. Louis, Ill.

**CENTRAL RAILWAY CLUB.**—E. F. Ryan (President), Buffalo, Rochester & Pittsburgh Ry., Buffalo, N. Y. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.

**CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.**—(See Master Car Builders' and Supervisors' Association.)

**CINCINNATI RAILWAY CLUB.**—D. R. Boyd, 811 Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

**CLEVELAND RAILWAY CLUB.**—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, except July, August, September, Hotel Hollenden, Cleveland.

**INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.**—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Exhibit of International Railroad Master Blacksmith's Supply Men's Association.

**INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.**—J. H. Jones, Crucible Steel Company of America, Pittsburgh, Pa.

**INTERNATIONAL RAILWAY CONGRESS.**—Madrid, Spain, May 5-15, 1930.

**INTERNATIONAL RAILWAY FUEL ASSOCIATION.**—C. T. Winkless, Room 700, La Salle Street Station, Chicago. Next meeting, May 6-9, 1930, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

**INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.**—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

**INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.**—L. R. Pyle, Locomotive Firebox Co., Chicago. Meets with International Railway Fuel Association.

**MASTER BOILER MAKERS' ASSOCIATION.**—A. F. Stiglmeier, New York Central, 29 Parkwood St., Albany, N. Y. Annual meeting, May 21-24, 1930, William Penn Hotel, Pittsburgh, Pa. Exhibit by Boiler Maker's Supply Men's Association.

**MASTER CAR BUILDERS' AND SUPERVISORS' ASSOCIATION.**—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago. Exhibit by Supply Men's Association.

**NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.**—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.

**NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.**—James B. Walker, 270 Madison Ave., New York. Next convention,

Nov. 12-15, 1930, Charleston, S. C.

**NATIONAL RAILWAY APPLIANCE ASSOCIATION.**—C. W. Kelly, 1014 South Michigan Ave., Chicago. Exhibit at A. R. E. A. convention.

**NATIONAL SAFETY COUNCIL.**—Steam Railroad Section: A. W. Smullen, C. M., St. P. & P., Chicago.

**NEW ENGLAND RAILROAD CLUB.**—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

**NEW YORK RAILROAD CLUB.**—E. Sumner (President), Asst. to Gen. Supt. M. P. Penna. R. R., Philadelphia, Pa. Regular meetings, 3rd Friday in month, except June, July and August.

**PACIFIC RAILWAY CLUB.**—W. S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings 2nd Tuesday in month, alternately in San Francisco and Oakland.

**RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.**—F. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual convention, April 30-May 2, 1930, Hotel Roosevelt, New Orleans.

**RAILWAY BUSINESS ASSOCIATION.**—Frank W. Naxon, 1406 Packard Bldg., Philadelphia, Pa. Annual meeting, November 21, 1929, Hotel Stevens, Chicago.

**RAILWAY CAR DEPARTMENT OFFICERS' ASSOCIATION.**—(See Master Car Builders' and Supervisors' Association.)

**RAILWAY CLUB OF PITTSBURGH.**—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

**RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.**—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

**RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.**—F. W. Venton, Crane Co., 836 S. Michigan Ave., Chicago. Meets with Traveling Engineers' Association.

**RAILWAY FIRE PROTECTION ASSOCIATION.**—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

**RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.**—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, American Railway Association.

**RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.**—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division 1.

**RAILWAY TREASURY OFFICERS' ASSOCIATION.**—I. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa.

**ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.**—T. F. Donaboe, Gen. Supr. Road, Baltimore & Ohio, Pittsburgh, Pa. Exhibit by Track Supply Association. Next meeting, 1930, Chicago.

**ST. LOUIS RAILWAY CLUB.**—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings 2nd Friday in month, except June, July and August.

**SIGNAL APPLIANCE ASSOCIATION.**—F. W. Edmonds, West Nyack (Rockland Co.), N. Y. Meets with A. R. A. Signal Section.

**SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.**—Clyde Kimball, Inman Shops, Atlanta, Ga. Meet semi-annually.

**SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.**—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, June, September and November. Ansley Hotel, Atlanta.

**SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.**—R. G. Parks, A. B. & A. Ry., Atlanta, Ga.

**SUPPLY MEN'S ASSOCIATION.**—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Div V. Equipment Painting Section.

**SUPPLY MEN'S ASSOCIATION.**—Bradley S. Johnson, W. H. Miner, Inc., Chicago. Meets with Master Car Builders' and Supervisors' Association.

**TRACK SUPPLY ASSOCIATION.**—L. C. Ryan, Oxweld Railroad Service Co., 80 E. Jackson Blvd., Chicago. Meets with Roadmasters' and Maintenance of Way Association.

**TRAVELING ENGINEERS' ASSOCIATION.**—W. O. Thompson, 1177 East 98th St., Cleveland, O. Exhibit by Railway Equipment Manufacturers' Association.

**WESTERN RAILWAY CLUB.**—W. J. Dickinson, 189 West Madison St., Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

THE BOSTON & MAINE, beginning November 25, will provide warm cars for the shipment of perishable freight from Boston to 580 stations in Massachusetts, Vermont, New Hampshire, Maine and Canada. Loading days are varied so that each one of the 580 stations will have at least one loading at Boston each week.

## Traffic

The New England Council announces that the governors of the six New England states are to appoint a committee of 30 to examine all phases of New England transportation requirements.

The Railway Express Agency has completed arrangements for through express service between all points in the United States and stations on the National Railways of Mexico.

The New York Central plans to open an office for both passenger and freight service at Michigan boulevard and East South Water street, Chicago, on December 1. All lines of the New York Central system will be represented.

The New York Central (as well as the Pennsylvania) will run a special train from New York to Chicago on November 20, for the accommodation of passengers going to the annual dinner of the Railway Business Men's Association, which is to be held in Chicago, on November 21; leave New York on Wednesday at 2 p.m., returning, leave Chicago on Friday at noon.

Following the success of the 20-day, all-expense, escorted tours operated from Chicago to California and return over the Atchison, Topeka & Santa Fe, the Western Pacific, the Denver & Rio Grande Western and the Chicago, Burlington & Quincy, during the past year, these roads, which established the tours in the fall of 1927, will operate five tours during the early part of 1930. One will leave Chicago in January, two in February and two in March.

Class I carriers, during the first seven months of 1929, reduced unlocated loss and robbery 16.3 per cent or from \$2,747,978 to \$2,298,563, as compared with the same period of 1928. Robbery of entire package was decreased 27.4 per cent, or from \$374,366 to \$270,696; robbery of other than entire, 19.5 per cent, or from \$235,161 to \$189,418; unlocated loss of other than entire package, 15.9 per cent, or from \$1,002,560 to \$843,578; and loss of entire package, 12.4 per cent, or from \$1,135,891 to \$994,871.

The Interstate Commerce Commission has issued an order in connection with its regulations for the transportation of explosives and other dangerous articles authorizing the continued use after November 1 and until further order of fiberboard and pulpboard boxes for the transportation of strike-anywhere matches provided the boxes are constructed in accordance with shipping container specification No. 6. By order of September 19, 1928, the commission authorized the continuance of service tests with these containers and it now states that the service tests as well as laboratory tests show the test boxes to be safe and

satisfactory containers for the purpose for which they were designed.

### One Shipment of 1500 Cars

A shipment of 120-ft. fir piling, recently reported as moving from the Pacific Northwest to Edgewater, N. J., where the piles will be used in the construction of an automobile plant, totaled 1500 cars, three cars being required for each load. This freight was carried over the Northern Pacific and the Chicago, Burlington & Quincy to Chicago and thence over various roads. This is believed to be the largest movement of this type ever made, surpassing a shipment of 250 loads made to Canada several years ago.

### Record Coal Handling at Sandusky

The Pennsylvania docks at Sandusky, Ohio, have so far this year led all ports on the Great Lakes in coal tonnage loaded in lake vessels, settling a coal-dumping record of more than 7,500,000 tons, according to W. C. Higginbottom, general manager. This sets one of the highest marks ever made on the Great Lakes and Sandusky has topped all lake ports for every month since April. To move this tonnage the Pennsylvania has operated a total of 126,507 cars. The highest previous record at Sandusky was slightly under 7,000,000 tons, a mark reached in 1927. These docks last month broke all records for one month, when a total of 24,230 carloads, 1,438,054 tons, passed over the dumping machines—an average of 807 carloads a day.

Of the total dumping of 5,022,921 tons during September at all docks on the Great Lakes, the Sandusky docks unloaded 1,438,054 tons, or 28.6 per cent, while, so far this season, the Sandusky docks have handled nearly 24 per cent of all coal unloaded into lake vessels at lake ports.

The coal transferred at Sandusky comes from the eastern and southwestern bituminous fields and is delivered to the Toledo division of the Pennsylvania through the Columbus gateway.

### Luckenbach Complaint Dismissed

Characterizing the Luckenbach Steamship Company as "a free lance in the transportation world", the Interstate Commerce Commission has dismissed its complaint against the principal railroads serving southeastern territory by a finding that their class and commodity rates on freight between the ports of New Orleans, La., and Mobile, Ala., on the one hand, and interior points in southeastern territory on the other, on goods transported from and to Pacific coast territory through the Panama Canal by the steamship company, are not unreasonable or unduly prejudicial. Commissioners Eastman, McManamy and Taylor dissented.

"Complainant", the majority report said, "acting as a free lance in the transportation world, refuses to place itself in a position wherein its rates and charges might become subject to regulation by this commission and yet seeks to invoke our aid in assisting it to divert from carriers subject to the act, and whose rates and charges are subject to regulation by us, certain traffic which the rail carriers now enjoy, on the plea that the situation, competitive or otherwise, does not justify the conduct of the rail carriers here complained of, whose lines are used to complete the transportation of freight brought into the ports by the complainant's boat lines and destined to points beyond by rail. The complainant's admitted object is to obtain a monopoly of the transportation of this competitive traffic and to deprive the transcontinental rail carriers, if possible, from participating therein. We do not mean to imply that it seeks to do this by anything other than legal and justifiable means. The relief which the complainant would have us grant would entirely eliminate or materially impair the competitive conditions so far, at least, as this traffic is concerned, now existing between the water and the rail lines and which it is the express policy of the law to encourage and preserve. Competition within reasonable limits is the declared public policy of Congress as evidenced by the various provisions of the transportation act. While we have no power to restrain competition between rail and water carriers under conditions and circumstances such as are here disclosed we will not permit, much less require, carriers subject to our jurisdiction to engage in unreasonable competition. This we take it was the purpose of Congress in conferring upon this commission the minimum rate power. The complainant concedes that the transcontinental all-rail rates now charged are abnormally low. In fact, it contends that they are unreasonably so. To take the action prayed for by the complainant would, in our opinion, be directly contrary to the provisions of the law which the complainant is here seeking to invoke."

The complaint alleged that the rail rates are unjust and unreasonable whenever they are the same as or higher than those over the same lines on like traffic which has not been or is not to be transported by water, and, as compared with the divisions of rates contemporaneously received by defendants on like traffic when moving from or to the Pacific coast over all-rail routes, are unduly preferential of the transcontinental railroads and the Mississippi river gateways through which the traffic moves. It also called the rates unduly prejudicial to complainant and other steamship companies on traffic moving to and from southeastern territory through the Panama canal and the ports to which the traffic moves by water. The report adds that the "scope of the complaint is much more comprehensive than the proof."



## Equipment and Supplies

### Locomotives

THE NEWBURGH & SOUTH SHORE has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE WABASH is inquiring for 25 locomotives of the 4-8-4 type which will have a total weight in working order of 400,000 pounds.

THE ST. LOUIS-SAN FRANCISCO is inquiring for 30 locomotives of the 2-8-2 type. These locomotives will have 27- by 32-inch cylinders and a total weight in working order of 356,000 pounds.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for 40 locomotives of the 4-8-4 type. These locomotives will have 26- by 32-inch cylinders and a total weight in working order of 438,000 pounds.

THE SIERRA RAILWAY OF CALIFORNIA has ordered one 2-8-2 type locomotive from the American Locomotive Company. Inquiry for this equipment was reported in the *Railway Age* of July 13.

THE PARACATU ESTRADO DE FERRO (Brazil) has ordered one 2-6-2 type locomotive from the Baldwin Locomotive Works. Joaquim Ribeiro de Oliveira, chief engineer, Bom Despacho, E. de Minas Geraes, Brazil.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered five 4-8-4 type locomotives from the American Locomotive Company. Inquiry for this equipment was reported in the *Railway Age* of September 7.

### Passenger Cars

THE WABASH is inquiring for three baggage and mail cars.

THE BALTIMORE & OHIO is inquiring for 50 passenger coaches.

THE DELAWARE, LACKAWANNA & WESTERN has ordered one steel postal car 60 ft. long from the American Car & Foundry Company.

THE DELAWARE & HUDSON has ordered two all steel mail and baggage cars with 30 ft. mail compartment, from the American Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of September 21.

### Freight Cars

THE DUCKTOWN CHEMICAL & IRON COMPANY, New York, is inquiring for three all-steel ore cars of 40 tons' capacity.

THE UNITED FRUIT COMPANY has ordered 100 banana cars of 30 tons'

capacity and 80 extra superstructures from the Magor Car Corporation.

THE VIRGINIA-CAROLINA CHEMICAL CORPORATION, Richmond, Va., has ordered one tank car of 50 tons' capacity from the General American Tank Car Corporation. This car is to be used for carrying sulphuric acid.

THE CHICAGO & NORTH WESTERN has ordered 100 steel underframes for caboose cars from the American Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of October 19.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for 5,000 freight cars as follows:

No.	Type	Capacity	Length
1,000	Single Sheathed Automobile Cars...	40 tons	40 ft.
500	Single Sheathed Automobile Cars...	40 tons	50 ft.
2,000	Single Sheathed Box Cars .....	50 tons	40 ft.
1,000	Drop Bottom Coal Cars .....	.....	70 ft.
250	Stock Cars .....	40 tons	40 ft.
250	Flat Cars .....	50 tons	40 ft.

### Signaling

THE CHESAPEAKE & OHIO has ordered from the Union Switch & Signal Company, an interlocking machine, 16 working levers, for installation at Greenway, Va.

THE UNION PACIFIC has ordered from the Union Switch & Signal Company material for an electric interlocking at Twentieth street, Omaha, Neb.; a Model 14 machine, 39 levers.

### Iron and Steel

THE KANSAS CITY SOUTHERN is expected to order 8,000 tons of rails in the next few days.

THE MISSOURI PACIFIC has ordered 50,000 tons of rails, 10,000 from the Illinois Steel Company, 10,000 from the Inland Steel Company, 12,000 from the Tennessee Coal, Iron & Railroad Company and 18,000 from the Colorado Fuel & Iron Company.

### Miscellaneous

THE DELAWARE, LACKAWANNA & WESTERN has contracted with the Consolidated Car Heater Company, Albany, N. Y., for 12,126 enclosed safety type, electric heaters, weighing 30 pounds each. One of these heaters will be installed under each double seat in each of the 141 all-steel electric vestibuled motor cars, now being constructed by the Pullman Car & Manufacturing Corporation, Chicago, and the 141 all-steel vestibuled trailer cars now being converted by the American Car & Foundry Company, Berwick, Pa. These cars are to be used in electrified commuter trains between Hoboken, Montclair, Gladstone and Dover, N. J. The Lackawanna also has on order with the Locke Insulator Company, Baltimore, Md., 23,135 porcelain insulators of various sizes, for use in its electrification work.

## Supply Trade

The American Locomotive Company has exercised an option to purchase control of the McIntosh & Seymour Corporation, Auburn, N. Y.

Albert J. Sams, 28 East Jackson boulevard, Chicago, has been appointed exclusive railway sales representative for the Little Giant Company, Mankato, Minn., manufacturers of power hammers.

The Combustion Engineering Corporation, New York, has opened a district office at 1411 Fourth avenue, Seattle, Wash. George M. Bechtel, recently of the Los Angeles office has been appointed branch manager.

Frank Dustan and O. B. Schmeltz, sales engineers formerly located at the Putnam Machine Works, Fitchburg, Mass., have been transferred to Pittsburgh, Pa., to assist the Arch Machinery Company, Pittsburgh, in representing Putnam machine tools of Manning, Maxwell & Moore, Inc. Their headquarters are in the Park Building, Pittsburgh.

Joseph T. Ryerson and Son, Inc., have purchased the business equipment and stock of the Penn-Jersey Steel Co., Camden, N. J., effective November 16. This firm carries stocks of steel shapes, plates, sheets, hot and cold finished bars, reinforcing bars, etc., and serves all industry and construction trades in the Philadelphia district. The Ryerson Company plans to add to the stock and increase the facilities.

The Chain Belt Company, Milwaukee, Wis., has opened a New England district office at 950 Park Square building, Boston, Mass. J. K. Merwin is district manager. Mr. Merwin graduated from Yale University in 1924 and after serving at the Chain Belt Company's Milwaukee plant and West Milwaukee plant, he went to Cleveland with the company's subsidiary, the Stearns Conveyor Company.

F. B. Farmer, representative of the Westinghouse Air Brake Company at St. Paul, Minn., has been appointed assistant to the director of engineering. After several years' service as fireman and engineer on the Southern Pacific, Mr. Farmer entered the employ of the Westinghouse Company in 1890 as assistant instructor on the air brake instruction car. Three years later he was transferred to the St. Paul office as inspector and promoted to representative in 1905. C. J. Werlich, mechanical expert in the same office, has been promoted to representative, succeeding Mr. Farmer. Mr. Werlich, after several years' service as an engineman on the Chicago, Milwaukee & St. Paul, joined the Westinghouse Company in 1920, and was assigned to the St. Paul office as

mechanical expert, which position he held until his recent promotion. **V. B. Emerick**, formerly of the Locomotive Stoker Company, has been appointed mechanical expert at the St. Paul office of the Westinghouse Air Brake Company.

### Cardwell and Westinghouse Draft Gear Interests Unite

The Union Draft Gear Company, Chicago, by corporate action has changed its name to the Cardwell Westinghouse Company. The new company will hereafter conduct the draft gear business formerly owned by the Westinghouse Air Brake Company, as well as that of the Union Draft Gear Company. As heretofore, the Westinghouse draft gear will be manufactured by the Westinghouse Air Brake Company at its Wilmerding, Pa., plant. The following officers of the Cardwell Westinghouse Company have been elected: Chairman of the board, **A. L. Humphrey**, president of the Westinghouse Air Brake Company; president, **J. R. Cardwell**, president of the Union Draft Gear Company; vice-president, **L. T. Canfield**, vice-president of the Union Draft Gear Company; secretary-treasurer, **C. H. Tobias**, secretary and treasurer of the Union Draft Gear Company. The main office of the company will be at 332 S. Michigan avenue, Chicago, with branch offices in New York, Pittsburgh, St. Louis and Montreal.

**V. Villette** has been appointed Pacific manager of the **Westinghouse Air Brake Company** at San Francisco, Cal., succeeding the late H. S. Clark. Mr. Villette was formerly an engineer on the Southern Pacific and entered the em-



V. Villette

ploy of the Westinghouse Company in 1917 at San Francisco. In 1922, he was advanced to representative at the same office, which position he held until his recent promotion.

THE MANUFACTURERS' RAILWAY has been granted permission by the St. Louis Board of Public Service for the use of the railroad deck of the Municipal bridge over the Mississippi river. The Alton & Southern had previously been given a permit to operate over the bridge.

## Construction

**ATCHISON, TOPEKA & SANTA FE.**—A contract for the construction of an addition to the enginehouse at Shopton, Iowa, which will include shop facilities, has been awarded to W. A. Smith & Son, Fort Madison, Iowa.

**CANADIAN NATIONAL.**—Demolition of houses north and south of this company's right of way, between Bonaventure Station and Fulford street, Montreal, is to start on November 15, as the first step towards building the overhead road bridges at Guy and Mountain streets which are included in the \$50,000,000 terminal project. Those south of the right of way will be the first to go, and on December 15, the work of destroying those to the north on St. James street will be commenced. Tenders are now being called for.

**CANADIAN NATIONAL.**—A contract for clearing the right of way, grading and the installation of culverts for the construction of a branch line from St. Walburg, Sask., to Bonnyville, Alta., 126 miles, has been let to the Tomlinson Construction Company, Winnipeg, Man., and the Western Construction Company, North Battleford, Sask. The estimated cost of this line is more than \$4,000,000. The contract for the clearing, grading and installation of culverts for the construction of a branch line from Hamlin, Sask., to Glenbush, 32 miles, has been awarded to Gibbs Brothers, Lumsden, Sask., with a total estimated expenditure of \$1,150,000. A contract has been let to Victor Ray, The Pas, Man., for ditching at various points on the Turnberry subdivision between Hudson Bay Junction, Sask., and The Pas, involving approximately 68,000 cu. yd. of excavation. Other contracts awarded are as follows: Filling trestle bridges and constructing reinforced concrete culverts on 14 miles of line on the Elrose (Sask.) subdivision, to Bryson Brothers, Winnipeg; filling trestle bridges and constructing reinforced concrete culverts on 6.5 miles of line on the Turtleford (Sask.) subdivision, to Laidlaw & Smith, Wolseley, Sask.; filling trestle bridges on 3.5 miles of the Yorkton (Sask.) subdivision and on 4 miles of the Coronado (Alta.) subdivision, to Foley Brothers, Winnipeg and J. Fitzgerald, Edmonton, Alta., respectively; the construction of stream diversions on 8 miles of the Drumheller (Alta.) subdivision, to the Tomlinson Construction Company, Ltd., Winnipeg. Several contracts for building construction have been let as follows: A 10-stall addition to the Alder roundhouse at Edmonton, Alta., to the R. H. Trough Company, Ltd., Edmonton; reconstruction of the roof of the Fort Rouge freight car shop at Winnipeg, to A. E. Hamilton, Ltd., Winnipeg; erection of a 16-room employees building, a 12-room officers building, three 10-room cabins

and four 6-room cottages, all of log construction, at Jasper, Alta., to H. G. MacDonald & Co., Edmonton; stations and other roadway buildings on the Willowbrook (Sask.) Northwesterly branch and on the Ashmont (Alta.)—Bonnyville branch, a total of about 50 miles of line, to Foley Brothers, Ltd., Winnipeg, and stations and roadway buildings on the Turtleford (Sask.) Southwesterly branch and on the Spruce Lake, (Sask.) Westerly branch, a total of about 20 miles, to W. C. Wells, Wilkie, Sask. A contract for the construction of pipe lines and the installation of intakes for water supply at Albreda, B. C., Blue River and Kamloops Junction has been awarded to the Jamieson Construction Company, Edmonton.

**CHICAGO, ROCK ISLAND & PACIFIC.**—A contract has been awarded to the Roberts & Schaefer Company, Chicago, for the construction of a 50-ton capacity concrete track hopper in connection with an electric locomotive coaler at South Chicago, Ill.

**CINCINNATI UNION TERMINAL.**—A contract has been let to the Folwell Engineering Company, Cincinnati, Ohio, for the wrecking of the Liberty Street viaduct over the site of the Union terminal project at Cincinnati.

**CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.**—A contract for the construction of a two-story passenger station at Linndale yards, Cleveland, Ohio, has been awarded to the Cleveland General Construction Company, Cleveland. The building will have outside dimensions of 30 ft. by 130 ft. and involves an expenditure of about \$150,000.

**GRAND TRUNK WESTERN.**—Plans have been filed with municipal authorities for the construction of a brick and stone passenger station at Ferndale, Mich., which will serve as a station on the proposed suburban electrified section of the railway from Detroit to Pontiac. The structure will have outside dimensions of 24 ft. by 60 ft.

**GRAND TRUNK WESTERN.**—This company has awarded contracts for the construction of a new locomotive terminal at Pontiac, Mich., which involves a total expenditure of about \$400,000. The work to be done includes the construction of a 10-stall enginehouse, with 15 outside tracks and a 90-ft. three-point turntable, a powerhouse with a 190-ft. chimney, a machine shop, a 100,000-gal. steel water tank, a deep-water cinder pit with traveling loading crane, an office and stores building, a drainage system and other incidental items, including a direct steaming system for locomotives. The contractors include the Ellington Miller Company, Chicago, the Rust Engineering Company, Pittsburgh, Pa., the Bethlehem



Steel Company, Bethlehem, Pa., the Chicago Bridge & Iron Works, Chicago, the Johnson, Larsen & Co., Detroit, Mich., and the Ogle Construction Company, Chicago. Contracts have been let to the Walsh Construction Company, Chicago, for the construction of an office building, freight house and transfer platform at Elsdon yards, Chicago, and a passenger station in the same city. The construction at Elsdon yards includes a brick office building which will have dimensions of 30 ft. by 40 ft., a freight house, 40 ft. by 120 ft., with a covered transfer platform, 14 ft. by 835 ft., and three tracks with 80-cars capacity and two team tracks which will have a capacity of 44 cars. The cost of this project will be about \$110,000. The passenger station is designed for suburban and through service at Sixty-third street and will be constructed of brick, with outside dimensions of 30 ft. by 127 ft. and with a stairway and baggage elevator to the upper track level, involving a total expenditure of \$30,000. A one-story brick and stone passenger station with dimensions of 24 ft. by 60 ft., will be constructed by the Ellington Miller Company at Ferndale, Mich., at a cost of approximately \$25,000. A contract has been let to P. T. Clifford & Son, Valparaiso, Ind., for the construction of three highway subways, five overhead highway bridges and a bridge over the Clinton river, which will include two 125-ft. spans, on the new belt line around Pontiac at a total cost of \$285,000. A third project at Pontiac, which brings the aggregate expenditure under recent contracts at that point to \$875,000, consists of the excavation of 180,000 cu. yd. of material to provide a 200-car capacity yard adjacent to the plant of the General Motors Corporation and a subgrade for future grade reduction and double-tracking of the main line. A contract for a portion of this work has been awarded to the Nelson and Chase & Gilbert Company, Boston, Mass., while company forces will also be employed on the project, which involves a total cost of about \$190,000. Other contracts recently awarded by the Grand Trunk Western include the repairing of masonry, raising of bridge seats and application of surface protection to concrete in 12 double-track bridges between Chicago and Port Huron, Mich., at a cost of \$45,000, to the Wertz Company, Cleveland, Ohio.

**GREAT NORTHERN.**—The budget of this company for 1930 authorizes the installation of new stationary power-plants at Willmar, Minn., Williston, N. D., Havre, Mont., Great Falls and Whitefish at a total cost of about \$400,000. It is planned to install boilers which will burn pulverized coal.

**LONG ISLAND.**—The Medford road grade crossing, Brookhaven, N. Y., has been designated for elimination by the Public Service Commission of New York. The elimination will be accomplished by depressing the grade of the highway to allow a 14-ft. clearance under the railway tracks.

**LOS ANGELES TERMINAL EXCHANGE, INC.**—The Interstate Commerce Commission has dismissed this company's application for a permit to construct a terminal railway and passenger station at the Plaza and civic center, Los Angeles, Calif. The commission had previously issued a certificate that it would be in the public interest for the Atchison, Topeka & Santa Fe, the Los Angeles & Salt Lake and the Southern Pacific to build a new union station at that point and a case is pending in the Supreme Court of the United States as to the power of the commission to require the construction, as asked by the city and state authorities.

**MICHIGAN CENTRAL.**—A contract has been awarded to the Ellington-Miller Company, Chicago, for the construction of a one-story brick freight station at Windsor, Ont., which will have outside dimensions of 50 ft. by 500 ft.

**MISSOURI PACIFIC.**—A contract for the construction of a 50-ton capacity concrete track hopper in connection with an electric locomotive coaler at Joplin, Mo., has been awarded to the Roberts & Schaefer Company, Chicago.

**NORFOLK & WESTERN.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of an extension from a point near Newhall, W. Va., up Jacobs Fork and Horsepen Creek, 7 miles to reach a proposed tipple site.

**OLIVER COAL COMPANY.**—A contract for the construction of a two-mile connection from this company's mine near Paonia, Colo., to the Denver & Rio Grande Western at Somerset has been let to Platt Rogers, Inc., Pueblo, Colo., at a cost of about \$75,000.

**PENNSYLVANIA.**—A contract for the installation of automatic electric elevating equipment to modernize the present coal-ling station at Orangeville, Md., has been let to the Roberts & Schaefer Company, Chicago.

**SOUTHERN PACIFIC.**—This company and the city of Houston, Tex., have reached an agreement for the lowering of the grade of the tracks of the San Antonio & Arkansas Pass between McGowen and Yupon avenues in that city, a distance of about 2 miles. The cost of the work is estimated at \$70,000 of which the railroad will pay \$55,000.

**SUGAR LAND.**—This company has applied to the Interstate Commerce Commission for authority to construct an extension of 12 miles westerly from Cabell, Tex.

**WABASH.**—It is expected that the city of St. Louis will advertise early in November for bids for the construction of grade separation structures at the crossings of Union drive and Lindell boulevard with this company's tracks. The project also involves the depression of the railroad's tracks through Forest Park. The work, which is to be undertaken in accordance with an agreement reached last spring between the railroad and city officials, will cost about \$480,000.

## Financial

**BALTIMORE & OHIO.—Equipment Trust.**—The Bankers Company of New York, the Continental Illinois Company and Evans Stillman & Co., are offering \$13,500,000 of 4½ per cent equipment trust certificates, series F, of this company maturing in installments to 1944 at prices to yield 5.125 per cent to 6 per cent.

**CANADIAN NATIONAL.—Director Dies.**—Frederick G. Dawson of Prince Rupert, B. C., a member of the board of directors of this company was killed at Prince Rupert on October 27, when struck by a train at the Canadian National passenger station.

**CHICAGO, INDIANAPOLIS & LOUISVILLE.—Bonds.**—The Interstate Commerce Commission has authorized this company to procure the authentication and delivery of \$1,637,000 of first and general mortgage 5 per cent bonds, series A, to be delivered to its treasury in exchange for a like amount of 6 per cent bonds, series B, issued under the same mortgage, which latter bonds are to be cancelled.

**DENVER & RIO GRANDE WESTERN.—Bonds.**—This company has applied to the Interstate Commerce Commission for authority to issue \$3,464,000 of refunding and improvement mortgage 5 per cent gold bonds, to be held in the treasury. Authority is also asked to pledge them from time to time.

**GEORGIA & FLORIDA.—Receivership.**—A recent order of the Federal Southern District Court placed this road in receivership and appointed as receivers William V. Griffin and H. W. Purvis, who was president of the road. An ancillary bill was filed in the United States District Court for the western division of South Carolina where the same receivers were appointed. The receivership is a result of losses in revenue and damage to property sustained through the recent floods in this road's territory.

**MISSOURI PACIFIC.—Securities.**—This company has filed with the Interstate Commerce Commission a supplemental application in connection with its application for authority to lease the property of 22 subsidiary companies, asking authority, in the event the application is granted, to assume obligation and liability as lessee in respect of the securities of the New Orleans, Texas & Mexico and the International-Great Northern.

**MISSOURI PACIFIC.—Stock Issue.**—This company has applied to the Interstate Commerce Commission for authority to issue \$17,800,100 of common stock from time to time in conversion of the outstanding preferred stock, and also \$38,659,900 of common stock to provide for the payment, in cash or in stock or both, of \$35,720,549 of unpaid cumulative dividends on the preferred stock, amounting to \$49.75 a share. The balance of the

proceeds of the stock issue is to be used for capital purposes. It is proposed to offer the stock, in part capitalization of expenditures of \$50,865,698 in the acquisition of property and additions and betterments, for subscription by preferred stockholders in the ratio of one share for each four held and to call for deposits of preferred stock under an agreement to accept stock or cash received as proceeds from the issue for their unpaid dividends.

**NEW YORK CENTRAL.—Acquisition.**—This company has applied to the Interstate Commerce Commission for authority to acquire joint control with the Chesapeake & Ohio of the Sewell Valley, Loop & Lookout and Greenbrier & Eastern by purchasing one-half of the stock now owned by the C. & O., under an agreement dated in 1925 which provided for the construction of the lines and the ultimate vesting of the joint control in the Nicholas, Fayette & Greenbrier. The New York Central also asked authority to assume obligation and liability in respect of one-half of the principal and interest of \$300,000 of first mortgage bonds of the Sewell Valley.

**PUEBLO UNION DEPOT COMPANY.—New Director Elected.**—H. B. Lautz, assistant general manager of the Atchison, Topeka & Santa Fe, has been elected a member of the board of directors of this company to succeed Charles H. Bristol.

**SOUTHERN.—Hearing in Clayton Law Case Postponed.**—The Interstate Commerce Commission has postponed to a date to be hereafter fixed the hearing set for November 4 on its complaint against the Southern for violation of the Clayton Law in the acquisition of control of the Mobile & Ohio and New Orleans & Northeastern.

### Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates, as follows:

Vicksburg, Shreveport & Pacific	\$8,725,000	1918
Alabama & Vicksburg	7,827,500	1918
Manufacturers' Junction	803,500	1919

### Dividends Declared

Central of Georgia.—3½ per cent, payable December 31.

Elmira & Williamsport.—Common, \$1.15, payable November 1 to holders of record October 21.

Hudson & Manhattan.—Common, 1¾ per cent, payable December 2 to holders of record November 16.

Illinois Central.—Common, \$1.75, quarterly, payable December 2 to holders of record November 8.

Maine Central.—Common, 1 per cent, quarterly, payable January 2 to holders of record December 16; Preferred, 1¼ per cent, quarterly, payable December 2 to holders of record November 15.

Pennsylvania.—\$1, quarterly, payable November 30 to holders of record November 1.

Reading Company.—First Preferred, \$.50, quarterly, payable December 12 to holders of record November 21.

### Average Prices of Stocks and of Bonds

	Last Oct. 29	Last week	Last year
Average price of 20 representative railway stocks.	126.78	150.71	122.11
Average price of 20 representative railway bonds.	91.38	91.44	94.05

## Railway Officers

### Executive

**Sir Henry W. Thornton** has signed a contract to act as chairman and president of the Canadian National for another period of five years dating from October, 1928. Negotiations which have been in progress for some time between Sir Henry, the Canadian National directors and the Canadian government have just been concluded, and the agreement is sanctioned by an order-in-council just passed at Ottawa.

**Thomas A. Hiam**, who has been appointed assistant to the president of the Canadian National, with headquarters at Vancouver, B. C., has had a varied career of 28 years of railway and military railway service in Canada, Europe and Asia. He was born at Montreal, Que., on August 21, 1886, and obtained his academic education at the Tuckers and the Montreal high schools. He entered railway service at the age of 15 years on the Grand Trunk and shortly thereafter resigned to enter the service of the Canadian Pacific. In 1905 Mr. Hiam was appointed chief clerk in the office of the general manager of the Eastern lines of the Canadian Northern (now part of the Canadian National) and two years later he was transferred to the office of the vice-president of that rail-



Thomas A. Hiam

way at Toronto, Ont., remaining at that point until the outbreak of the World War. During the next five years of hostilities he served in France and Macedonia as colonel in the Canadian Engineers and in the 198th Canadian Infantry Battalion and as adjutant of the 207th Battalion. When the latter unit was disbanded he was transferred to the Royal Engineers and after the signing of the armistice in 1918 he was sent to Constantinople, Turkey, as a member of the Inter-Allied Railway Commission, and later he was appointed military director of the Anatolian section of the

Bagdad Railway. Mr. Hiam returned to Canada late in 1919 and was engaged for about a year in railway and other construction work in Northern British Columbia. He was then appointed technical advisor for railways to the League of Nations at Geneva, since which time he has visited every part of Europe in connection with railway and other transportation questions.

### Operating

**T. P. Brewster**, telegraph and telephone supervisor on the Coast lines of the Atchison, Topeka & Santa Fe at Los Angeles, Cal., has been promoted to assistant superintendent of telegraph of the Coast lines, with headquarters at the same point.

**D. J. Deasy**, trainmaster on the Chicago & Alton at Bloomington, Ill., has been promoted to assistant chief operating officer, with headquarters at Chicago. **J. R. Postlethwaite**, train rules examiner, has been appointed trainmaster at Bloomington, succeeding Mr. Deasy.

**Richard Wright**, passenger trainmaster of the Canadian National, has been appointed superintendent of the Cochrane division. Mr. Wright has been in the service of that road since 1902, having served successively as freight clerk, division agent and passenger trainmaster. **Norman A. Walford**, supervisor of car service at Toronto, has been appointed passenger trainmaster, succeeding Mr. Wright. He will in turn be replaced by **J. Wellington Hotrum**.

**R. B. Butler** has been appointed trainmaster of the Arkansas division of the Missouri Pacific, with headquarters at Little Rock, Ark., succeeding **B. H. Layne**, deceased. **L. J. Wilkes** has been appointed trainmaster of the Greenwood, Paris and Fort Smith districts of the Central division, with headquarters at Fort Smith, Ark. The position of assistant superintendent of the Central division, with headquarters at Fort Smith, has been abolished.

**F. A. Stine**, superintendent of dining cars of the Delaware, Lackawanna & Western, with headquarters at Hoboken, N. J., has been appointed manager of the dining car and commissary department of the Baltimore & Ohio, succeeding **E. V. Baugh**, deceased. Prior to his recent appointment, Mr. Stine had served as superintendent of dining cars for the D. L. & W. for ten years. He also served in the dining car service of the Chicago, Burlington & Quincy from 1902 to 1919. Mr. Stine, in his new position, will have jurisdiction over the entire B. & O. system.



**A. P. Stevens**, who has been district manager of District No. 2 of the Car Service Division of the American Railway Association at Detroit, Mich., since May 1, 1925, has been appointed district manager of District No. 8 with headquarters at New York, N. Y., vice **E. J. Cleave**, granted leave of absence on account of ill health. **C. R. Megee**, who has been car service agent of the Car Service Division, has been appointed district manager at Detroit succeeding Mr. Stevens. Mr. Stevens was born December 13, 1873 and was operator, agent, train dispatcher and inspector of transportation for the Pennsylvania. On January 1, 1918, he became connected with the Car Service Section of the United States Railroad Administration and remained with the organization after the creation of the Car Service Division on March 1, 1920. He was promoted to district manager at Detroit May 1, 1925. Mr. Megee was born December 7, 1888. After service with the Pennsylvania as agent and train dispatcher he became connected with the Car Service Division in January, 1923.

**John A. Appleton**, who has been promoted to general superintendent of the Northwestern division of the Pennsylvania, with headquarters at Chicago, has been in the operating department of that railroad for more than 14 years. He was born at New York on December 24, 1891, and graduated from Yale University in 1914. In September, 1915, he



John A. Appleton

entered railway service as a yard clerk on the Pennsylvania, where he remained until October, 1917, when he enlisted in the engineer corps of the United States Army. Mr. Appleton served in France where he attained the rank of captain in the transportation corps. In August, 1919, he returned to the Pennsylvania as terminal supervisor of the Greenville yards at Jersey City, N. J., being advanced to assistant trainmaster of the New York division a year later. From 1922 to 1924 he occupied successively the positions of trainmaster of the Cumberland Valley division at Chambersburg, Pa., and freight trainmaster of the Philadelphia Terminal division at Philadelphia, Pa. In June, 1924, he was pro-

moted to superintendent of the Monongahela division, with headquarters at Uniontown, Pa., later being transferred to the Erie and Ashtabula division at New Castle, Pa., to the Columbus division at Columbus, Ohio, and to the Pittsburgh division at Pittsburgh, Pa. In June, 1929, he was appointed acting general superintendent of the Lake division, with headquarters at Cleveland, Ohio, his promotion to general superintendent of the Northwestern division becoming effective on October 23.

## Engineering, Maintenance of Way and Signaling

**F. D. Kinnie**, division engineer of the San Francisco Terminal division of the Atchison, Topeka & Santa Fe, with headquarters at San Francisco, Cal., has been promoted to district engineer of the Coast lines, with headquarters at Los Angeles, Cal. **R. E. Chambers**, assistant division engineer of the Valley division, with headquarters at Fresno, Cal., has been promoted to division engineer of the Arizona division, with headquarters at Needles, Cal., succeeding **O. R. West**, who has been transferred to the San Francisco Terminal division to replace Mr. Kinnie.

**Robert L. Pearson**, who has been appointed chief engineer of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., was born on April 2, 1882, at Philadelphia, Pa. He was educated at Swarthmore College and entered railway service in June, 1903, as transitman for the American Railways Company. He entered the service of the New Haven in 1904 as inspector in the construction department, later in the same year he became transitman in the construction department, where he served until 1907, at which time he was transferred to the maintenance department in the same capacity. In October, 1908, Mr. Pearson was appointed assistant engineer and in September, 1914, he became track supervisor. Two years later he was appointed division engineer in the maintenance department. From October, 1917, to September, 1918, Mr. Pearson was with the U. S. Shipbuilding Company at Hog Island, returning to the New Haven on the latter date as division engineer, also serving in the same capacity on the Central New England Railroad. He was appointed maintenance engineer for these two roads in 1921 and in 1923 he was advanced to the position of engineer maintenance of way, the position he held at the time of his recent appointment as chief engineer of the New Haven.

**P. R. Leete**, who has been appointed valuation engineer of the New York, New Haven & Hartford, with headquarters at Boston, Mass., was born in Pawtucket, R. I. He attended the public schools of that city and Brown University. In 1903 he entered the service of

R. H. Tingley Company, consulting engineers in Providence, R. I., and in May of the following year he entered the service of the New Haven as rodman in the office of the division engineer at Providence. Later that year he was assigned to the Providence Tunnel work, remaining there until the tunnel was fin-



P. R. Leete

ished. He was then transferred to the division engineer's office at New Haven. From February, 1911, until December, 1913, he served as resident engineer in the construction department, working on the Hawleyville to Shelton double tracking. In the latter year, when the valuation department was organized in Boston, Mr. Leete went to that city, and he has been engaged in valuation work ever since, serving as assistant valuation engineer until his recent appointment.

**L. E. Little**, who has been appointed corporate engineer of the New York, New Haven & Hartford, with headquarters at Boston, Mass., was born in Bucksport, Me. He was educated at the University of Maine, from which institution he graduated in 1904. During



L. E. Little

school vacations and immediately following his graduation he was employed in various engineering positions with Eastern railroads. He entered the employ of the New Haven in November, 1906. In 1909 he became associated with the

Connecticut Company in the office of the chief engineer at New Haven. The following year he resigned from that company to engage in mining engineering in the West. He returned to Maine in 1911, where he was employed by the Great Northern Paper Company and later by the International Paper Company as engineer and superintendent. In 1915, at the beginning of the federal valuation of the railroads, Mr. Little returned to the New York, New Haven & Hartford with the valuation engineering organization at Boston as pilot engineer and later he was promoted to assistant valuation engineer. He became engineer of roadway and structures of the corporate organization in 1918 handling engineering matters and claims during the federal control period. In 1920 he was appointed assistant corporate engineer, continuing corporate claims work and handling special valuation matters. Since January, 1927, he has been supervising the valuation of the five affiliated electric railway properties of the New Haven system.

## Traffic

**Richard B. Leng** has been appointed chief of the tariff bureau of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn.

**R. A. Ells** has been appointed general agent of the Illinois Terminal at Alton, Ill., succeeding **O. J. Knapp**, who has resigned to become traffic manager of the Mississippi Lime & Material Co.

**R. K. Horton** has been appointed general agent of the New York Central, with headquarters at Rochester, N. Y., succeeding **T. Y. Newman**, who has resigned to engage in other business.

**P. G. Safford**, who resigned recently assistant general freight agent of the St. Louis Southwestern at St. Louis, Mo., has been appointed assistant to the president of the Mississippi Valley Barge Line Company at that point.

**W. A. Olliff** has been appointed general freight agent of the Fernwood, Columbia & Gulf in charge of rates and divisions, with headquarters at Tylertown, Miss.

**C. E. Harris** has been appointed general eastern agent of the Midland Valley, the Kansas, Oklahoma & Gulf and the Oklahoma City-Ada-Atoka, with headquarters at New York.

**D. H. Hutchinson**, division freight agent on the Peoria & Eastern at Indianapolis, Ind., has been promoted to assistant general freight agent, with headquarters at the same point.

**R. S. Hirsch**, traveling freight and passenger agent on the Atchison, Topeka & Santa Fe at Sacramento, Cal., has been promoted to general agent at that point, succeeding **Elmer B. Johnson**, who has been appointed industrial agent at San Francisco, Cal.

**F. E. Watson**, general passenger agent of the Southern Pacific, with headquarters at Los Angeles, Cal., has been promoted to assistant passenger traffic manager, with headquarters at San Francisco, Cal. **Henry P. Monihan**, district passenger agent at Los Angeles, has been promoted to general passenger agent to succeed Mr. Watson.

## Purchases and Stores

**Eldred L. Cates** has been appointed division storekeeper of the Northern Pacific, with headquarters at Dilworth, Minn., succeeding **M. O. Weber**, who has resigned.

**John E. Mahaney**, superintendent of stores of the Chesapeake & Ohio, with headquarters at Richmond, Va., has been appointed general supervisor of stores of that railway, the Hocking Valley and the Pere Marquette, with headquarters at Cleveland, Ohio. The office of superintendent of stores of the Chesapeake & Ohio has been discontinued.

**J. W. Cain**, manager of purchases of the American Short Line Railroad Association, with headquarters at Houston, Tex., has resigned effective December 31, to devote his entire time to the presidency of the San Diego & Gulf and the Duval Texas Sulphur Company and the Consolidated Purchasing Agency of the Short Line Association will be discontinued on that date.

## Mechanical

**J. M. Holt** has been appointed general car inspector of the Pacific Lines of the Southern Pacific, with headquarters at San Francisco, Cal., a newly created position whose duties relate to car shop production and the maintenance of car equipment.

## Special

**W. D. Durland**, formerly manager of the Gulf States section for James D. Lacey & Co., at New Orleans, La., has been appointed forester for the Missouri Pacific lines, a newly created position, with headquarters at St. Louis, Mo.

## Obituary

**Harry E. Rittenhouse**, trainmaster on the Ohio Central lines of the New York Central at Columbus, Ohio, died at his home in that city on September 14, following a three weeks' illness.

**Cartwright G. Smith**, superintendent of the New Orleans & Lower Coast, with headquarters at Algiers, La., died at his home in that city on October 24 at the age of 36 years. Mr. Smith has been connected with the N. O. & L. C. for 17 years.

**William Ellis**, who was special representative of the legal department and

commerce counsel of the Chicago, Milwaukee & St. Paul at Chicago, from 1907 to 1912, died at his home at Woodstock, Ill., on October 25. Mr. Ellis, after leaving the Milwaukee in 1912, was engaged for a time in the newspaper business at Gray's Lake, Ill., and during federal control of the railroads he served at Washington, D. C., as assistant to the general counsel of the United States Railroad Administration during 1918 and 1919. At the time of his death he was publisher of a traffic law service and an index digest of Interstate Commerce Commission decisions.

**R. W. Bell**, retired general superintendent of motive power of the Illinois Central, who died on October 14, had been connected with that road for 41 years and had been in railway service somewhat longer. He was born at St. Mary, Ont., on October 22, 1865, and entered railway service as a machinist apprentice. Following the completion of his apprenticeship Mr. Bell served on the Great Northern and on the Northern Pacific as a machinist, on the former road as a locomotive fireman and on the Chicago, Burlington & Northern (now part of the Chicago, Burlington & Quincy) and the Wisconsin division of the Illinois Central as a locomotive engineman. After 11 years as an engineman on the Illinois Central Mr. Bell was advanced to traveling engineer of the St. Louis division in 1899, where he remained until the following year when he was appointed general foreman of the Kentucky division, with headquarters at Louisville, Ky. In 1901 he was promoted to master mechanic of the St. Louis division, with headquarters at East St. Louis, Ill., then being transferred to the Iowa division, with headquarters at Waterloo, Iowa, in 1903. In 1908 he was further promoted to assistant superintendent of machinery, with headquarters at Chicago, and in the following year he became superintendent of machinery. Mr. Bell was promoted to general superintendent of motive power of the Illinois Central, with headquarters at Chicago, on July 1, 1913, a position he held until his resignation from railway service on October 1.



R. W. Bell